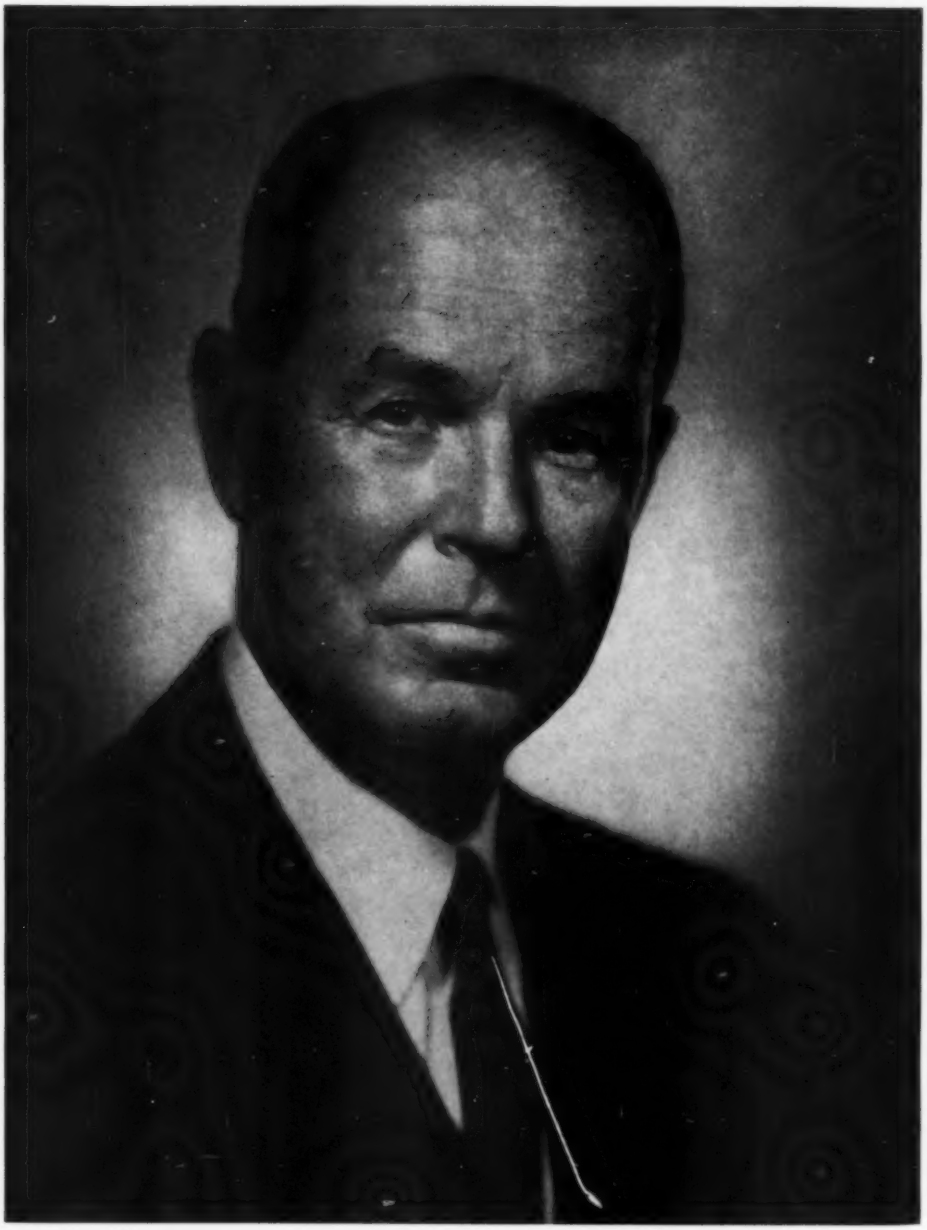
FARM CHEMICALS

SEPTEMBER 1961
50 CENTS

The management magazine of the industry



Claude O. Stephens, president, guiding force behind

Texas Gulf's diversificatic

Exclusive this month:

Second article in management series: How to plan

Technical review:

NPFI survey on plant food losses

Special reports:

Southwestern Fertilizer Association meeting

Pesticide Situation for 1960-1961

FCMS

Materials handling:

Cut costs with bottom loading

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How to buy Anhydrous Ammonia and Nitrogen Solutions

by George Day

About the Author. Twenty-four years' experience serving customers are George Day's qualifications for writing about buying and selling an industrial commodity. For the last six of his 24 selling years, George has been working with customers who buy Ammonia and Nitrogen Solutions.

* * *

In the purchase of NH_3 and Nitrogen Solutions, look for a supplier with a good reputation. This kind of supplier has built up his good name probably over many years at great expense and he has a strong desire to see that this good name is preserved. When this is the case, it is the buyer who benefits.

Being a good supplier includes all of the routine things expected of such a source—the keeping of promises, dependable deliveries, quality that meets or exceeds specifications, etc.

However, there is much more to a good reputation. There is the matter of having the initiative to go beyond the routine, plus the willingness to do a little more than is necessary to get the business. Superior traffic know-how is among these. Being able to let a customer know exactly when to expect delivery, and knowing intimately the routing and timing of shipments are items to look for when deciding on an Anhydrous Ammonia and Nitrogen Solutions supplier.

Perhaps I wouldn't list these suggestions for selecting a supplier if I hadn't seen from experience how much they mean to *our* customers.

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The national business magazine for the fertilizer and pesticide industries, FARM CHEMICALS, serves primarily those persons responsible for management, marketing and production. It has a qualified circulation for selected executive and supervisory persons within specified segments of these industries, as well as in certain closely allied fields. Subscription rates to all others are: in the U.S., its possessions, Canada, Cuba and Panama: $6.00; in other countries: $7.50. Current issue 50 cents. Back issues $1.00. (Current issues become back copies on the 5th of the month following publication.) Established in 1894 as *The American Fertilizer.*

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THE COVER STORY

Under the leadership of its president Claude O. Stephens, Texas Gulf Sulphur Company, long one of the free world's leading sulfur producer, is taking a big step into diversification. Texas Gulf's giant step into the field of potash identifies it even more closely with the farm chemicals field. Stephens, 52, has been in "brimstone" throughout his career. He first joined Texas Gulf as a driller's helper. After Army service in World War II, he was placed in charge of the company's new plant in Worland, Wyo., which pioneered in the recovery of sulfur from "sour" natural gas. In 1952, Stephens was elected a vice-president, and in 1957 he became president. Since then he has lifted the sights of Texas Gulf Sulphur to new expansion horizons—including the diversification move into potash.

How Union-Camp's 5-Star Plan saved multiwall bag user over $130,000 a year

Making things the same can sometimes make a whale of a difference. Particularly in a multiwall bagging operation. The Smith-Douglass Company, Inc., of Norfolk, Virginia proved it recently when they put Union-Camp's 5-Star Plan into action. The difference—in annual packaging savings—came to over $130,000 a year!

Standardize = Economize

Initial 5-Star Plan surveys at Smith-Douglass' six plants revealed that *standardization* held the key to major cost reductions. Three plants used sewn open-mouth multiwall bags. One used sewn valve bags. The remaining two plants used both types of bags.

Union-Camp's multiwall specialists showed that $30,000 a year could be saved by converting all six plants to sewn open-mouth bags and using open-mouth bag filling machines.

5-Star Plan in action. Plant surveys made by Union-Camp multiwall specialists paved the way for the major packaging savings described here.

That was only the beginning. By carrying the change-over one step further, and standardizing on *size* and *construction* of multiwall bags, the company would save another $22,000 a year.

1 Design Replaces 160

Next, Union-Camp's survey team analyzed the company's existing bag *designs*. They found there were about 160 designs being used. Here, again, standardization was recommended.

By creating one basic design, eliminating an expensive yellow outer sheet, and using the same printing copy for all bags, the company netted additional economies of $84,000 a year.

$30,000 plus $20,000 plus $84,000. Total annual packaging savings—$134,000.

$30,000 a year savings resulted from converting to sewn open-mouth multiwalls in company's six plants.

How Much Could You Save?

Hundreds of companies—large and small—reduce their multiwall packaging costs by taking advantage of Union-Camp's 5-Star Plan. This comprehensive service is free. It covers bag design, bag construction, specifications control, packaging machinery and a survey of your materials handling operation. An improvement in any one of these areas conceivably could result in substantial economies for you.

See your local Union-Camp man for complete details.

This basic bag design, now used for all Smith-Douglass brands, reduced company's multiwall costs by $84,000.

FREE 16-PAGE BOOKLET

Write Dept. M-4 today for a free copy of Union-Camp's new 5-Star Plan booklet. It describes many case histories showing how packers like yourself have achieved greater efficiency and economy in their multiwall packaging operations.

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LETTERS

THEY LIKED IT

Bedford, Ohio

We would appreciate permission to reprint the article "Why Control Stock?" from the June 1961 issue.

We intend to make this reprint available to our jobbers and our own salesmen for informative use in the dry cleaning industry.

With sincere thanks,
A. L. Green, General Manager
SIGNAL MFG. CO., INC.

Thanks for your interest. We're happy to grant permission.—EDITOR.

REPRINTS WANTED

Philadelphia 2, Pa.

I was very much interested by your article on Sphalerite which appeared in your July issue. If possible, please send us a half dozen reprints. I would like to have some of my people study this interesting review on zinc.

Cordially yours,
W. R. E. Andrews
W. R. E. ANDREWS SALES, INC.

Atlanta, Ga.

We are interested in obtaining reprints of the article entitled "Principles of Marketing Organization" by Eugene C. Mapel which appeared in the January 1961 issue. Would you please send us 30 reprints of this article.

Mildred Jackson,
State Supervisor, Distributive Education
GEORGIA STATE DEPARTMENT OF AGRICULTURE

Knoxville 1, Tenn.

We would like to obtain 200 copies of "Sphalerite Additions," the article which appeared in the July issue. Please let us know when reprints will be ready.

Very truly yours,
R. B. McNab
AMERICAN LIMESTONE CO.

We plan to have reprints of this article available soon.—EDITOR.

WHO MAKES MACHINE?

Cincinnati, Ohio

In the March 1961 issue you published an exclusive for the month entitled "What's Happening in Bulk Handling and Storage of Fertilizers," in which appeared a photograph of a pneumatic machine that handles the unloading of bulk material from a gondola car through a suction type hose. We would like to know the name of the firm who manufactures this type of equipment.

B. H. Brinkman
Asst. District Manager,
Cincinnati Sales Office
Virginia-Carolina Chemical Corp.

This type of equipment is manufactured by the following companies: Fuller Co., Mann Engineering Co., Representatives, Pittsburgh 22, Pa.; Myers-Sherman Co., Streator, Ill.; Ripco Air Systems, Oxford, Pa.; and Sprout-Waldron, Manufacturing Engineers, Muncy, Pa.—EDITOR.

MORE ON MARKETING!

New York 6, N. Y.

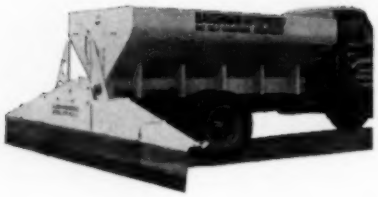
Your editorial, "Are You a Miracle Man?" in the July issue is an excellent one. A great many farm chemical concerns could make good use of the outlines you presented.

Kindest personal regards,
A. E. Buter
Assistant to Product Manager
NITROGEN DIV.,
ALLIED CHEMICALS

Thanks for your comments. For information on marketing, plan now to attend the 1961 Farm Chemicals Marketing Seminar, November 14-15 in New York City.—EDITOR.

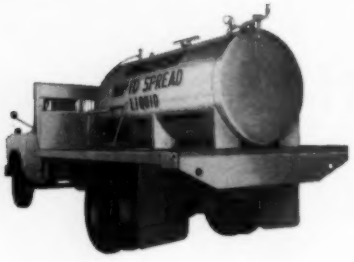
BAUGHMAN

THE COMPLETE LINE OF FERTILIZER SPREADERS



The K-BODY for Dry Fertilizer

Spreads lime and fertilizer efficiently and uniformly, in exactly the amount you want. The most rugged spreader body ever built, with fewer working parts, insuring longer service life. Exclusive lubrication-impregnated chain helps retard corrosion and prevent freezing. Your choice of 4 drives, 3 body styles, single or double distributor. Write for Bulletin A-425.



The RAPID SPREAD for Liquid Fertilizer

A completely self-contained unit; can be mounted on flat bed truck or farm wagon in 10 minutes. Spreads liquid in droplets in 40 to 60-foot pattern. Operates on compressed air, which heats and agitates fertilizer to prevent sludging in cold weather. Standard model holds 1000 gallons; other sizes built to order. Write for Bulletin A-461.

The QUICK-SPREAD for Dry Fertilizer

A versatile unit which spreads in any kind of weather; on muddy fields, rough pasture, in orchards, under low-hanging trees, and other hard-to-reach places. Holds one ton 60-pound granular; spreads an acre in 2½ minutes; spreading width up to 32 feet. One-man operation from tractor, jeep or pick-up truck. Driven from PTO or auxiliary engine. Write for Bulletin A-458.

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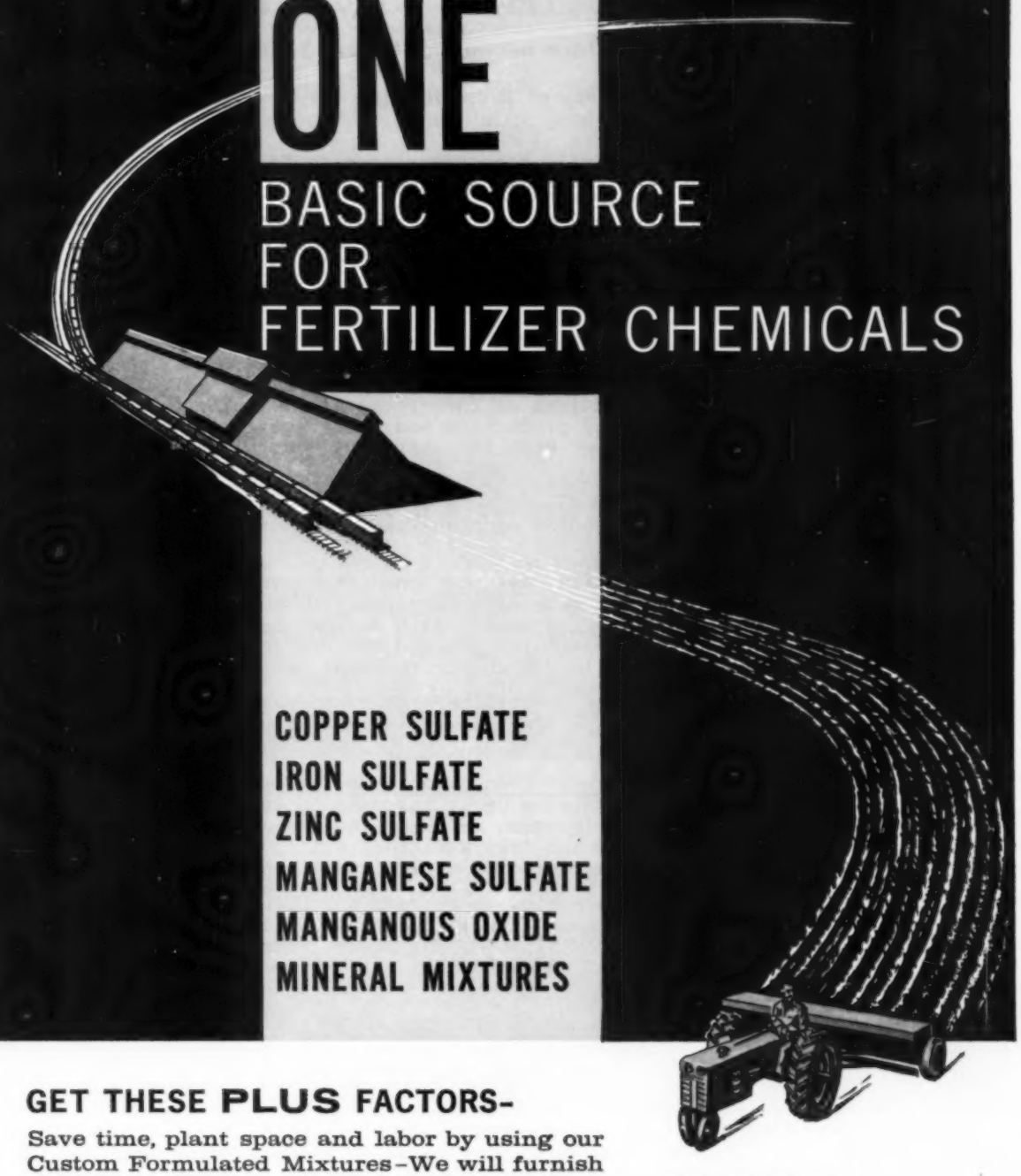

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WASHINGTON VIEWPOINT

By GEORGE PETER

F C

- *Increased payments to boost farm net income to over $1 billion in '62.*
- *Congress approves USDA policy of promoting growth of farmer co-ops.*

The new 1961 omnibus farm law will have sweeping effects—both for the short range now and next year and the long range for years ahead.

For the farm chemicals industry, there is as much impact as for the food industry and the entire range of argibusiness or for the farmer. For this reason, it is important to know some of the broad implications at the start.

Most important in trying to get the general picture is this—the law reverses the direction of Benson farm policy. Price support cuts and sky-high production ideas are out the window. So is the idea that survival of the fittest could set right whatever ails the farming business.

The new idea—mostly an extension of an old one—is that farm income can't be kept up without government mechanisms or farmer-operated machinery to insure a profit and return of costs at the production end. Congress turned down the farmer do-it-yourself idea. Hence, back to government control.

Farm net income gets a boost of over $1 billion in 1962 in increased payments under the new law. For the farm economy as a whole, the increase is estimated at closer to $2 billion when extra spending power in farmer credit in the law is included.

But the new administration is also dead set on cutting down the surplus. At least 35 million acres should be removed from production in 1962, say the early estimates. That's in corn, milo, and wheat, main targets of the cutback.

This looks like a stiff cut, but total planted acreage for all crops has been dropping the past five years while yields for the most part continue to improve.

The new law effect on chemicals, fertilizers, and equipment sales is planned to be a boomy one. Tighter acreage controls and higher prices encourage greater efficiency in farming.

Other factors offsetting wheat and feed grain cuts: Soybean acreage for the current crop is up 15% and should stay up or increase in 1962; potato plantings are up 8% and should stay up or increase in 1962; the new law permits USDA to increase allotments if necessary and they will turn out to be; and total farm plant production, consumption, and exports are constantly on the increase.

Liberalized farmer credit is expected to provide another shot in the arm for rural areas. In addition to the new farm law, over $400 million will be available in loans under the rural provisions of the new housing law for both farmers and non-farmers. Area development loans and grants also provide a rural income boost.

Food for Peace or P.L. 480 Program is extended three years for a total of $4.5 billion. Killed was a limitation requiring agreements of over $5 million to be approved by Congress. This means larger agreements may continue. If cold war needs dictate, you can count on Congress to approve additional authorizations if the $4.5 billion runs out before the three years is up.

Continuation of the P.L. 480 program means higher exports, smaller cuts in the grain surplus, and the need to keep up production at higher levels than the taxpayer would support otherwise.

Farmer co-operatives made gains in the new farm law, but not nearly so much as they wanted. Congress approved new USDA official policy to encourage and promote the growth of co-operatives in every way, but balked at widening any antitrust exemptions for co-ops.

Where co-ops took a step forward: Congress made it clear that two more co-operative associations may act together or through a joint agency in any operation which is legal when acting singly. This was already considered legal, but co-ops were never certain.

In the case of future mergers or acquisitions of other businesses, co-op attorneys will have to consider each move experimentally with the prospects most likely to turn out to be negative.

AN IMPORTANT ANNOUNCEMENT FROM ESCAMBIA CHEMICAL CORPORATION

The sale of all nitrogen products produced by Escambia Chemical Corporation is now being handled by our own sales force.

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For quality nitrogen products, service you can count on, and skilled technical assistance, call on Escambia.

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WHAT'S DOING IN THE INDUSTRY

F C

Reminiscent of the days of the gold rush is the flurry of activity around Moab, Utah. A new 36-mile spur line of the Denver and Rio Grande Western Railroad into the Salt Valley is spurring a flurry of new potash drilling. The story of Texas Gulf Sulphur's potash exploration appears on page 13 of this issue. But Texas Gulf is not alone in exploring this area. San Jacinto Petroleum Corp., New York City, is doing drilling on more than 30,000 acres of land controlled by Utah Potash Co., of Salt Lake City and Denver. The potash exploration work by San Jacinto covers an area north of Seven Mile Anticline (which is controlled by Texas Gulf).

Spencer Chemical Co. has jumped into the flexible packaging materials field. Since July 14, Spencer has acquired three companies in this field. Crystal Tube Corp., Chicago, and Flexicraft Industries, Inc., became wholly-owned subsidiaries of Spencer in July. Now Spencer has acquired all the outstanding stock of Wrapture, Inc., New York. As yet, Spencer has no plans to produce plastic films.

Farmers are in a borrowing mood, according to the Farm Credit Administration. Farmers and their purchasing and marketing co-operatives borrowed $4.3 billion—an 8% increase—from their co-operative Farm Credit System during fiscal year ended June 30. Biggest reason for increase is the rising capital needs of farmers.

As far as Shell Chemical Co. is concerned, insects are just a bunch of "homewreckers." That's the theme of a full-page Shell ad which appeared in 178 newspapers in 141 major cities from coast to coast. Response to the ad showing how much damage insects—particulary termites—can do to homes was fantabulous. Within a few days after the ad appeared, more than 19,500 inquiries had poured into Shell offices. In response to the inquiries, Shell mailed a pamphlet on the "private life" of a termite.

U.S. agricultural exports are not all give-aways. According to Walter Klein, president of Bunge Corp., a leading exporter of U.S. farm commodities, only about 6% of our farm exports are donations to relieve distress among friendly peoples through the $300 million Food-for-Peace program. In the fiscal year ending June 30, 1961 dollar sales of U.S. farm exports reached $3.4 billion. In volume, exports surpassed the previous high set in 1959-60 by 10%.

Hooker Chemical Corp. has formed its own alliance for progress program. Hooker will exercise its option to purchase enough stock of a new Argentine phenol and monochlorobenzene producer, Duranor, Industrias Quimicas Sociedad Anonima Industrial y Comercial, to bring its interests to 50%. An equivalent investment in the jointly owned company will be held by a major Argentine manufacturer of chemicals and plastics, Atanor, Compania Nacional para la Industria Quimica, S.A.M., of Buenos Aires. The new Duranor chemical plant is Hooker's first step in a planned expansion of company activities in Argentina.

Like the famed Mexican jumping bean—that's the way consumption of commercial fertilizer is moving south of the border. Mexican consumption jumped from a mere 50,000 tons in 1943 to 800,000 in 1955 and it's still rising. Increased use of commercial fertilizer is just one step in Mexico's plan to improve its agricultural production.

The Russian Cosmonauts aren't the only ones grabbing headlines by orbiting. International Minerals & Chemical Corp., is stealing the spotlight with a book entitled "Managing for Profit" which contains a complete collection of IMC Full Orbit manuals—a part of IMC's Total Service Program. The book has a two-fold purpose: to review fertilizer management practices and to suggest specific ways to improve operating efficiencies. It was used by IMC as the reference text for a three-day fertilizer management seminar held at the firm's administrative center in Skokie, Ill., this summer.

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Mn MANGANESE	.049	.097
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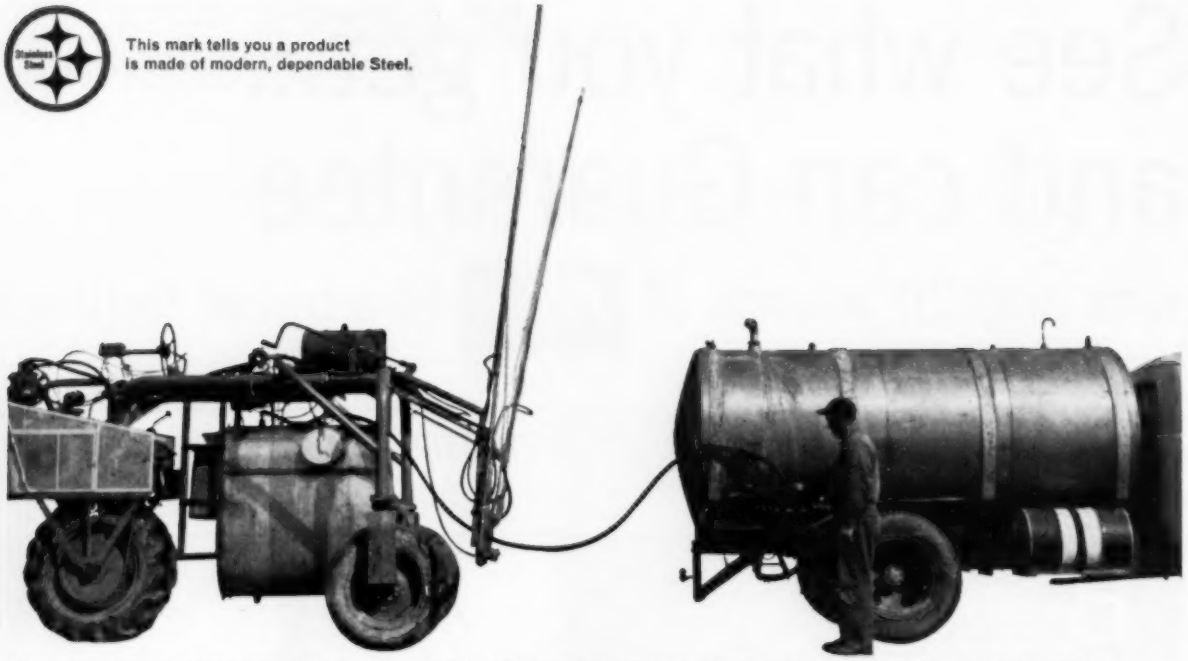

280-gallon Stainless Steel tank mounted on a Hahn "HI-BOY" high-clearance sprayer being filled from a 1,000-gallon Stainless Steel nurse tank.

One Stainless Steel tank can handle all liquid farm chemicals

George Lippencott, president of the Dorchester Fertilizer Company in Cambridge, Maryland, knows how important Stainless Steel tanks are for delivering liquid fertilizer. He says, "The inexpensive nurse tanks we started with worked fine for liquid nitrogen, but when we expanded to complete mixes and chemical solutions, the tanks didn't last. So, we switched to Stainless Steel. We've had one Stainless tank for ten years now—and we've had no problems with it.

"Because there are no maintenance delays with Stainless tanks, we get the job done on schedule. That means satisfied customers, more time to work and better business. Stainless Steel tanks are also built *strong* to take the rough handling we give them." With a Stainless tank, you merely rinse thoroughly with water when you change solutions. *One* Stainless Steel tank can handle *all* liquid farm chemicals.

Stainless Steel tanks are a smart business investment. They last a long time, they save maintenance cost, and they do the best job possible. If you would like to have more information about them, send the coupon. For Stainless Steel, call your nearest Steel Service Center. United States Steel Corporation · American Steel and Wire Division · National Tube Division · Columbia-Geneva Steel Division · Tennessee Coal & Iron Division · United States Steel Supply Division · United States Steel Export Company

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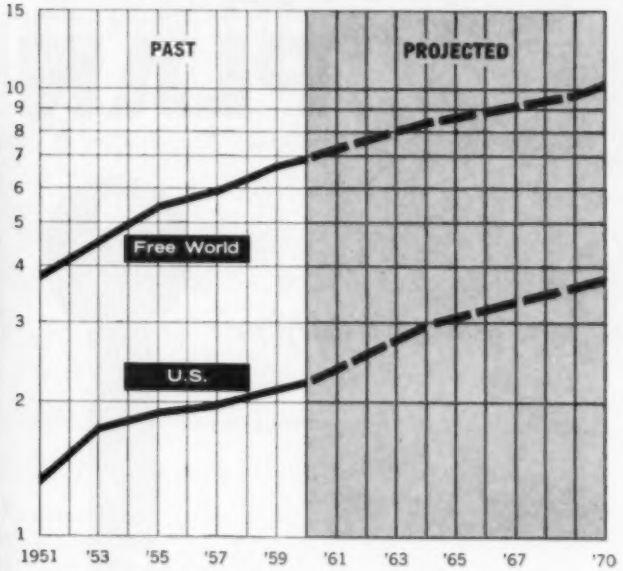
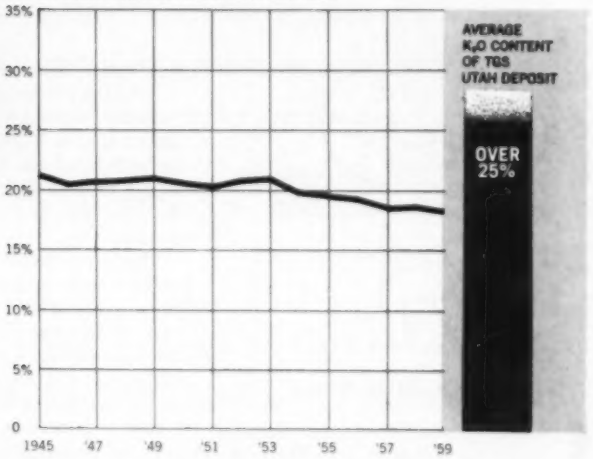
USS TRADEMARK Stainless Steel

Free World and U.S. Agricultural Consumption of Potash (In Millions of Tons, K_2O Equivalent)



Source: From a study by Arthur D. Little, Inc.

Average K_2O Content of Potash Ores Mined in New Mexico (Source: U.S. Bureau of Mines)



Claude O. Stephens guides one of the free world's leading sulfur producers into diversification. This is the story of

Texas Gulf Sulphur's Giant Step

By BRYAN W. GUESS*

FOR THE FIRST TIME in its long history as a major producer of one basic commodity, Texas Gulf Sulphur Company next year will begin production of another mineral vital to the farm chemicals field—potash.

Over 90% of all potash produced in the United States goes into the manufacture of fertilizer. For many years, American potash production has been centered around Carlsbad in southeastern New Mexico, with the six companies in production there accounting for 85% of the U. S. output. Most of the balance is produced at Trona, Calif. New sources are also being developed in Canada.

Texas Gulf's new potash mine is located on a 11,400-acre reserve in southeastern Utah, near the mining town of Moab. The mine is being designed to produce 1,100,000 tons of muriate of potash annually. This is a capacity greater than the current output of any domestic producer. Under our production plans, we expect to have potash on the market by the end of 1962.

What will this large new source of potash mean to the farm chemicals field? Will it mean oversupply?

Not at all, according to our view. We believe that our potash, coupled with any new supplies currently being developed in Canada, will merely fill a gap between supply and demand that is already widening.

The management of our company had a broad fund of information to back this decision to enter the potash field. Studies had pinpointed the fact: that U. S. consumption of potash has doubled in the last 10 years and that the present high-grade U. S. potash reserves are declining. Potash today is already moving toward short supply.

An intensive survey made by Arthur

(Continued on page 40)

**Manager of Sales, Potash Division, Texas Gulf Sulphur Company.*

PLANNING

your *key to profits*

How do you go about developing a workable plan? You'll find all the principles in this, the second article in our new management series.

*By ROBERT D. DAHLE

EVERY company does some planning—some more than others. The recent recession brought out the need for better planning on the part of many companies. And in other instances "the best laid plans" went down the drain—or at least were shelved for the time being.

In the fall of 1959, Wendell R. Smith, Director of Marketing Research and Development, Product Planning Department, Radio Corporation of America, explained the reason behind some of the difficulties companies experienced in an article appearing in *Business Horizons:*

"Because management identified the concept narrowly, planning was regarded as a tool of growth rather than a rational means of *achieving the most profitable adjustment to current and future market conditions, regardless of the stage of the business cycle.*"

How do *you* regard planning? Do you really know what it means?

What is planning? It is the thinking, judging, deciding aspect of the manager's job. It starts with the ideals and objectives of the business. It predetermines what shall be done, why it should be done, and how and by whom it shall be done.

Planning involves much more than being ready to handle problems when they arise. The function of planning runs all the way from defining the overall company objectives and goals to the planning of work programs, both long and short range. It includes the formulation of policies that provide guides to specific decisions so that they are consistent *without the necessity of constant clearance with superiors.*

In every business, no matter how large or how small, there are certain general areas which need to be planned. Some of these areas should be planned in detail; in other areas the planning can be more general. *However, all areas need to be considered, need to be planned by the manager.*

Here are several principles to be followed in the development of a plan:

- Define the objectives.
- Assign priorities to these specific objectives.
- Determine the obstacles that are in the way of your objectives.
- Determine the means and the methods of overcoming these obstacles.
- Determine what will be required in the way of personnel, in the way of facilities, including money.
- Assign the responsibilities.
- Lay out a time schedule.
- Set up measures for determining progress and results.
- Determine what administrative ac-

*Extension Marketing Specialist, North Carolina State College, Raleigh.

tion is required to get the program approved and into operation.

CRITERIA OF A PLAN

Before the plan is actually put into operation, the manager should examine it carefully to see if it meets the criteria of a good plan. He should ask himself these questions:

Is this plan both stable and flexible? A good plan is stable in terms of achieving the objectives for which it was designed. But, it is also flexible enough to allow for changes, variations, and exceptions to the currently prevailing conditions.

Is this plan properly timed? A good plan must be designed to fit into sound business strategy in relation to the conditions *expected* to prevail during its operation. It should include provision for systematic review to keep it up to date with current business conditions.

Is this plan clear and understandable? The manager, as planner, must be able to communicate his scheme to his associates if the plan is to have any significant effect upon the operation of

the business. *Poor communication usually signifies poor planning.*

Will this plan attain its objectives? The test of any plan is its effectiveness in attaining the objectives for which it was designed. The guiding line must therefore be *purpose.*

Does this plan have an adequate control element? A good plan should include assignment of responsibility for the completion of each phase; provision for progress statements and to whom they should be submitted; determination of the timing of completion of each part of the plan; and a statement of how each person shall close out and be discharged of his responsibility in connection with the plan.

After plans are established, the factors necessary to put these plans into operation must be arranged and placed in their proper relationship.

Personnel must be procured, developed and motivated; relationships between superiors and subordinates and between various executives must be established and outlined; procedures, methods and systems installed and made ready for operation; and needed tools, equipment, and supplies provided. ☆

Planning Objectives

It is worthy to note that the product line of today's marketing planners is exceedingly broad. At any given time, a firm can have one big plan or many small plans. Plans may emerge routinely as the first stage of budgeting activities; or their development may represent a special effort triggered by anticipation of change in the firm's marketing situation. Planning activities result largely from the desire to develop rational programs to achieve one or more objectives, such as:

- ***Enabling the firm to maximize profits for a stated operating period by increasing sales or margins and/or by reducing marketing costs.***
- ***Gaining or maintaining a desired share of the market.***
- ***Bringing about a change that will influence the performance of marketing functions by means such as installing a more smoothly operating marketing organization structure.***
- ***Preparing for the future by developing a program that will be activated when and if a specific contingency arises.***
- ***Preparing for a major change in the direction or in the scope of the firm's activities, such as would result from major construction, acquisition, merger, or entering a new channel of distribution.***

From Business Review

the PESTICIDE SITUATION for 1960-1961

Primary manufacturers' sales of pesticidal chemicals rose 3% in 1960 to $285 million

THE volume of pesticide usage is determined largely by weather conditions during the crop season. Wet weather was general in 1960, favoring the growth of weeds and the development of fungus diseases. As a result, the use of fungicides and herbicides rose over 1959 while insecticide sales were somewhat lower.

"Low temperatures for long periods during the spring of 1961 slowed the sale and use of insecticides," explained Harold H. Shepard, of Agricultural Stabilization and Conservation Service, USDA. "This situation will be reversed if the summer months are hot and moist. Increased use of herbicides last year, owing to product improvement and rising cost of manual weed control is likely to continue this year."

For the third successive year U. S. production of DDT was higher than ever before. Both 2,4-D and 2,4,5-T were manufactured in larger quantities than in any previous year. Total volume of synthetic organic pesticidal chemicals produced rose 9.2% and dollar volume 7.6% in 1960 over 1959.

1960 CONDITIONS

Occasional shortages, mostly temporary, of some pesticides were reported in 1960 and may occur again in 1961. National Agricultural Chemicals Association reported sales of pesticidal chemicals at the basic manufacturer's level to be up 3% over 1959 to $285 million.

The value of U. S. exports of pesticides rose to $105,891,000 in 1960. Copper sulfate, 2,4-D, 75% DDT, fungicides and disinfectants accounted for

U. S. Production of Some Major Pesticidal Chemicals Calendar Years, 1958-1960

Chemical	1958 1,000 lb.	1959 1,000 lb.	1960[1] 1,000 lb.
Aldrin-toxaphene group[2]	98,280	86,868	90,671
Benzene hexachloride (gross)[3]	30,797	27,574	37,444
Benzene hexachloride (gamma equivalent)[3]	6,500	5,500	6,900
Calcium arsenate	10,432	6,424	[5]
Copper naphthenate	1,853	1,887	1,893
Copper sulfate	97,192	80,584	116,000
2,4-D acid	30,944	29,282	36,185
2,4-D acid esters	21,938	24,672	34,031
2,4-D acid salts[4]	2,964	2,749	
DDT	145,326	156,741	163,582
Ferbam	[5]	[5]	2,434
Lead arsenate	14,938	12,904	[5]
Methyl bromide	10,224	11,193	11,264
Methyl parathion	5,018	5,987	11,794
Nabam	[5]	3,350	2,978
Parathion	5,439	9,180	7,448
Pentachlorophenol	35,177	38,814	39,336
Phenyl mercuric acetate	1,056	943	[5]
Sodium chlorate	134,498	176,600[6]	182,368
2,4,5-T acid	3,678	5,547	6,337
2,4,5-T acid esters and salts	5,230	8,033	7,924
Ziram	1,178	757	982

[1]Preliminary. [2]Includes aldrin, chlordane, dieldrin, endrin, heptachlor and toxaphene. [3]Includes lindane. [4]Sodium and amine salts. [5]Figure not available. [6]Revised figure.

Sources: U. S Tariff Commission; U. S. Bureau of the Census; U. S. Bureau of Mines; chemical industry.

Aerial Application of Pesticides in the U. S. in 1959[1]

Activity	Area treated 1,000 acres	Materials dispersed Dry 1,000 lb.	Liquid 1,000 gal.
Insect control, total	33,464	176,066	72,434
Crops, orchards, etc.	29,651	174,327	69,500
Forests	956	—	708
Towns, water, swamps	2,757	965	2,122
Soils	100	774	104
Plant disease control	791	9,915	1,203
Weed control	7,010	462	14,574
Brush control	1,249	168	4,646
Defoliation	3,559	17,434	18,050
Total	46,073	204,045	110,907

[1]Alaska and Hawaii not included.

Source: Federal Aviation Agency, Statistics Division, Survey of Aerial Application Activities.

SYMBOLS OF PLANT LIFE

A 20TH CENTURY SYMBOL FOR HIGHEST QUALITY POTASH

In the middle ages, working with little help from prior research, alchemists frequently developed materials by accident.

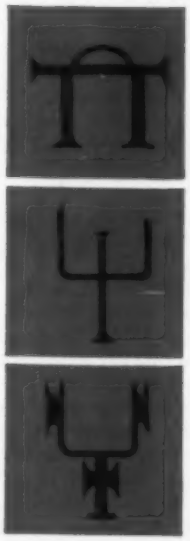
TODAY, MATERIALS ARE DEVELOPED BY PLAN TO MEET A NEED—JUST AS EACH TYPE OF HIGH-K MURIATE IS MADE TO MEET SPECIFIC REQUIREMENTS.

STANDARD HIGH-K MURIATE IS TAILOR MADE FOR CONVENTIONAL FERTILIZER MANUFACTURE AND VARIOUS RATIOS OF GRANULATED GRADES. IT FEATURES UNIFORM PARTICLE SIZE RANGE AND CHEMICAL ANALYSIS.

COARSE HIGH-K MURIATE IS USED IN THE MANUFACTURE OF CONVENTIONAL FERTILIZER AND IS ESPECIALLY USEFUL IN GRANULATION PLANTS. REASON: A CRYSTAL STRUCTURE WHICH DOES NOT BREAK DOWN WHEN ACIDS AND OTHER LIQUIDS ARE USED IN FORMULATION.

GRANULAR HIGH-K MURIATE IS A LARGER PARTICLE SIZE MURIATE FOR SPECIAL USE. SOUTHWEST POTASH PIONEERED THE PRODUCTION OF THIS ALL COMPACTED PRODUCT.

OUR PLANT PROCESSES ARE CONTINUALLY BEING MODERNIZED TO SUPPLY TYPES OF MURIATE NEEDED AND PREFERRED BY FERTILIZER MANUFACTURERS. ON SCHEDULE SHIPMENT, CAR AFTER CAR, DAY AFTER DAY, IS MAINTAINED THROUGHOUT THE YEAR.



Medieval alchemists' symbols for potash and cribbled ashes

SOUTHWEST POTASH CORPORATION

1270 Avenue of the Americas, New York 20, N.Y.

Domestic Disappearance of Some Major Pesticidal Chemicals for the Crop Year 1959-60[1]

Chemical	Stocks[2] Sept. 30, 1959 1,000 lb.	Production 1959-60 1,000 lb.	Exports 1959-60 1,000 lb.	Stocks[2] Sept. 30, 1960 1,000 lb.	Disappearance 1959-60 1,000 lb.
Aldrin-toxaphene group[3]	29,639	89,235	12,096[4]	31,012	75,766
Benzene hexachloride[5]	2,068[6]	7,532	2,299	2,190	5,111
Calcium arsenate	5,373[6]	4,874	152	2,781	7,314
Copper sulfate	5,608	102,600	20,318	7,552	80,338[7]
2,4-D (acid equivalent)	11,374	38,769	7,123[8]	11,889	31,131
DDT	14,495[6]	160,007	86,611	17,745	70,146
Lead arsenate	3,828[6]	11,837	1,620	2,872	11,173
2,4,5-T (acid equivalent)	3,728	5,645	712[8]	2,802	5,859

[1]Based on available information; crop year is from October 1 to the following September 30. [2]Stocks of primary producers only; for 2,4-D and 2,4,5-T, formulated concentrates in these stocks included also. [3]Includes aldrin, chlordane, dieldrin, endrin, heptachlor, and toxaphene. [4]Includes exports by primary producers only. [5]Gamma isomer basis; includes lindane. [6]Revised figure. [7]Disappearance for all domestic uses including industrial. [8]Assumed exports of 2,4,5-T to be one-tenth of combined exports of 2,4-D and 2,4,5-T.

Sources: (Stocks) Department of Agriculture (except copper sulfate by Bureau of Mines). (Production) Tariff Commission; Bureau of the Census; chemical industry. (Exports) Bureau of the Census.

a large share of the $20 million increase over 1959.

Total carryover of technical and formulated pesticides by primary producers and formulators in 1960 increased 13% over 1959. Concentrates and ready-to-use mixtures comprised 36% and technical chemicals 64% of total carryover.

For the three years 1958-1960, fungicides comprised 22.7% of total production of synthetic organic pesticides; herbicides, 26.4%; and insecticides, 50.9%.

HERBICIDES

Over 50 million acres of agricultural land were treated chemically for weed control in 1959, more than double the area to which herbicides were applied 10 years previously, according to a USDA survey. Total cost of treating 50,452,000 acres was $136,743,000.

Sales of agricultural herbicides increased 7% in 1960 over 1959. Preemergence products showed a 33% increase; post-emergence, 11%. Offsetting these gains materially was a drop of more than 40% in use of chemicals to kill weeds and brush in pasture and non-crop areas.

U. S. exports of herbicides in 1960 were valued at $9,662,000, compared to $6,715,000 in 1959. During the first three months of 1961 herbicide exports had a value of $3,835,000.

"Remarkable progress is being made in developing efficient herbicides for use with many crops," Shepard reported. "Some are adapted to either preemergence or post-emergence control of most common weeds infesting particular crops. Others can be used to control specific weeds or weed types, such as deep-rooted species. A new herbicide will control broad-leaved weeds in small grains seeded with legumes where previously treatment would have been impossible because of the susceptibility of clovers to 2,4-D and related weed killers."

Printed copies of the complete Pesticide Situation for 1960-61 may be obtained from Agricultural Stabilization and Conservation Service, USDA, Washington 25, D. C.

Manufacturers' Inventories of Pesticides (Technical Basis), September 30th[1]

Material	Stocks of primary producers only[2]		Stocks of all firms reporting for both 1959 and 1960	
	1959 (Revised) 1,000 lb.	1960 1,000 lb.	1960 1,000 lb.	1960 as percentage of 1959
Aldrin-toxaphene group[3]	29,639	31,012	39,096	100
BHC, including lindane:				
Gross basis	14,243	18,237	29,373	140
Gamma basis	(2,796)	(2,517)	(5,675)	129
Calcium arsenate	5,373[4]	2,781	2,720	52
Copper fungicides	9,813	12,177	15,126	110
2,4-D (acid basis)	11,374	11,849	14,372	108
DDT	14,495	17,745	29,318	102
Fumigants, grain and soil	26,081	47,169	48,382	169
Lead arsenate	3,828[4]	2,872	3,185	73
Miticides, non-phosphorus	1,806	1,632	2,302	88
Organic phosphorus compounds	5,894	9,573	13,708	136
Sulfur, ground	19,789	19,256	23,527	81
2,4,5-T (acid basis)	3,728	2,782[4]	3,090	72
Other fungicides	7,545	8,452	12,143	105
Other insecticides	3,418	4,090	10,189	108
Other weed killers[5]	16,080[4]	21,945	21,797	130
Other miscellaneous, including rodenticides	272	101	2,496	108
Total[6]	173,378	211,673	270,824	113

[1]Results of survey by U. S. Department of Agriculture in cooperation with the National Agricultural Chemicals Association, final report. [2]Chemicals in possession of their primary manufacturers; i.e., DDT stocks of DDT producers. [3]Includes aldrin, chlordane, dieldrin, endrin, heptachlor, and toxaphene. [4]Partly estimated. [5]Includes chlorates, defoliants, desiccants, and miscellaneous organic herbicides. [6]BHC (gamma basis) omitted to avoid duplication.

U. S. Exports of Pesticides by Calendar Years

Material	1959 $1,000	1960 $1,000	1960 1,000 lb.
Benzene hexachloride (gamma basis, 6% plus)	2,081	2,331	2,989
Calcium arsenate	12	21	290
Copper sulfate (normal and basic)	675	3,377	29,681
2,4-D and 2,4,5-T (acid basis)	2,665	4,251	8,796
DDT, technical	2,892	1,984	8,917
DDT (20-74%, 100% basis)	1,315	1,566	3,517
DDT (75% plus, 100% basis)	19,325	27,284	86,530
Disinfectants, household and industrial	4,108	4,931	11,273
Fumigants	1,065	1,340	4,656
Fungicides, n.e.c.	8,035	11,107	19,904
Herbicides, n.e.c.	4,050	5,405	10,011
Lead arsenate	276	355	1,888
Nicotine sulfate (40% basis)	9	5	4
Organic phosphorus insecticides (15% plus)	7,980	7,933	11,345
Paradichlorobenzene	366	682	6,231
Polychlor insecticides (15% plus)[1]	16,069	16,011	47,618
Pyrethrum extract	224	178	30
Sulfur, agricultural, n.e.c.	268	397	14,462
Agricultural insecticides, n.e.c.	8,466	10,037	54,321
Household and industrial pesticides, n.e.c.	6,040	6,696	20,986
TOTAL	85,921	105,891	[2]

[1]Includes aldrin, chlordane, DDD, dieldrin, endrin, heptachlor, methoxychlor, toxaphene and related chemicals and mixtures thereof. [2]No total given because BHC is reported only in terms of the gamma content, DDT as 100% technical, and 2,4-D and 2,4,5-T on the acid basis.

Source of export figures: U. S. Bureau of the Census Report No. FT 410, Part II, codes 82001-82280.

Electron micrographs showing plate-like Micro-Cel E and spherical Micro-Cel B structures.

1μ

Micro-Cel is quite compatible!

Micro-Cel®, Johns-Manville's new synthetic calcium silicate, is chemically inert and is compatible with nearly all toxicants. Micro-Cel cuts shipping costs by permitting such high toxicant concentrations as 50% Heptachlor, 70% Toxaphene and 75% DDT. Micro-Cel's unique structural characteristics (surface areas up to 175 sq. m/gr) reduce caking, improve flowability, increase suspendability and extend shelf life. For further information, samples and technical assistance, mail in the coupon below!

JOHNS-MANVILLE
Celite Division

1961

JOHNS-MANVILLE, Box 325, New York 16, N. Y.
In Canada: Port Credit, Ontario.

☐ Please send further information.

I am interested in using Micro-Cel with the following toxicants: _____

☐ Please send free sample of Micro-Cel.

☐ Please have your local Sales Engineer contact me.

Name_____ Position_____

Company_____

Address_____

City_____ Zone____ County_____ State____

Cut Costs With BOTTOM LOADING

Liquid spray material can be loaded into plane in less than one minute while pilot remains in cockpit

AERIAL spray services take note: you can save money by adopting a new system of loading liquid spray material.

Bottom loading cuts costs in three ways: the aircraft engine does not have to be shut off, as is necessary when loading through the top; the pilot does not have to help with the loading, and therefore need not spend extra time getting up and down in his seat, and refastening his seat belt and shoulder harness; and, using a five hp pump, the aircraft can be loaded with 160 gallons, insecticide and all, in one minute or less.

Wayland S. Fink, of Patterson Flying Service, Fresno, Calif., and vice-president of Agricultural Aircraft Association of California, Inc., recently pointed out these advantages of the new system of bottom loading. Equipment for fixed and mobile bottom loading is essentially the same. One advantage of a fixed loading site is that electric power may be used for the pump.

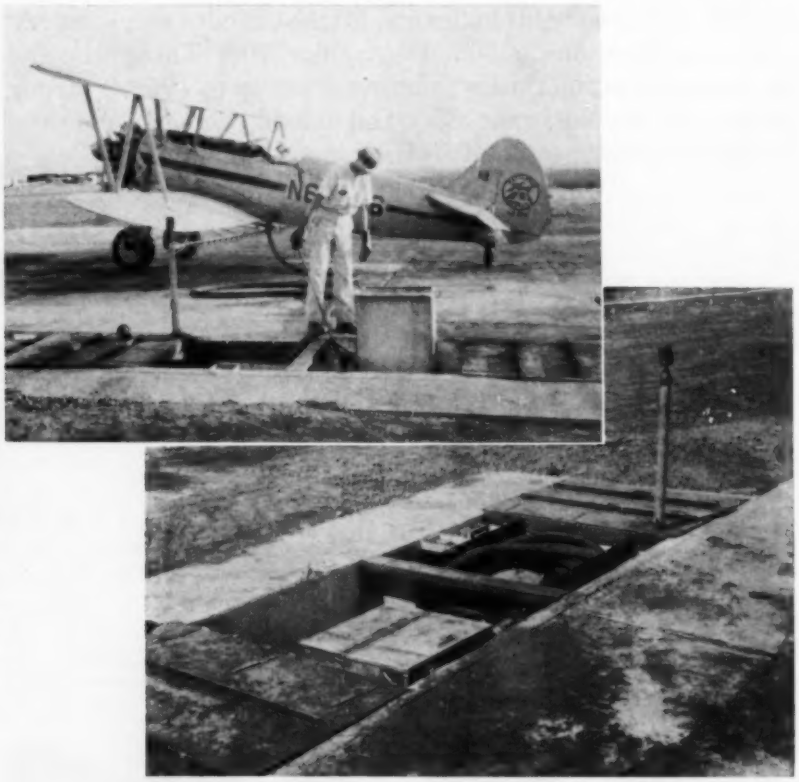
Under this system, the proper amount of concentrated spray material for one airplane load is put into the spray material tank. It is kept in this tank, undiluted, until the aircraft is ready to load.

When loading, the lever action is opened, allowing concentrated chemical to flow to the three-way valve, which is set to permit the material to flow to the pump. At the pump it is picked up and pumped through the loading hose into the airplane through the bottom loading coupling.

When the material tank is empty, the lever action valve is closed, and the three-way valve turned to allow water to flow through the pump into the plane. The larger volume of water following the spray material effectively flushes any residual chemical from the loading hose.

If the chemical in the material tank is not loaded into the aircraft immedi-

Different type of stationary rig used for bottom loading. Water is stored in large white tank; spray material in small tank mounted on frame at left. After use, spray tank can easily be flushed with water, using loading hoses.



While pilot remains in cockpit (top) worker loads plane with fixed bottom loading equipment stored in underground pit at edge of runway. Note that bottom loading coupling is only 18 inches above ground. At bottom is closeup of underground pit which is covered with steel doors when not in use. As doors open pump motor switch comes up to waist height. Material loading tank is below ground level; loading hose coiled around pump motor.

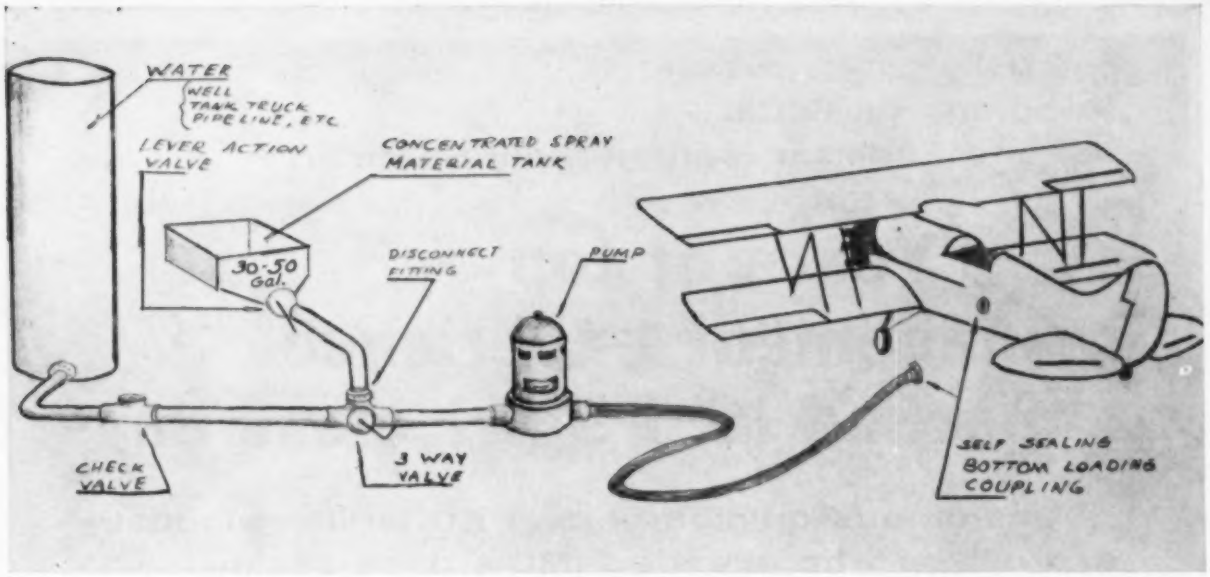


Diagram of bottom loading spray system.

ately, it is possible to remove it from the tank and return it to the original container for application at a later time. This process can be accomplished by disconnecting the fitting between the lever action valve and the three-way valve.

By opening the lever action valve the concentrated material may be drained from the tank and into the original container. A different material can then be loaded, or the loading equipment washed out.

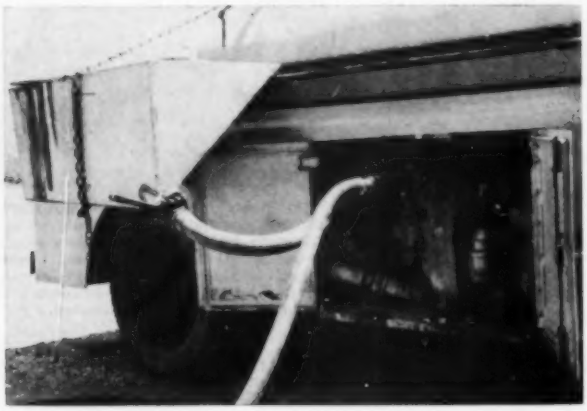
Commenting on the cleaning process, Fink said that the same type of quick coupling used for bottom loading can be screwed on the end of the boom and the boom may be flushed out thoroughly and quickly. By actuating the spray-recirculate valve in the aircraft, the pump may be back-flushed.

Back flushing can be done in about two minutes, fast enough to enable anyone to completely wash out the spray system between jobs using different kinds of spray materials.

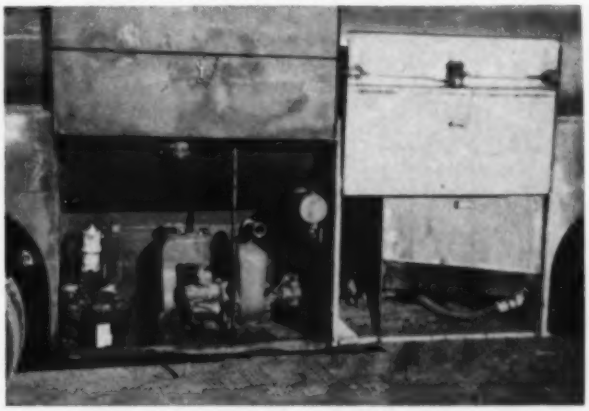
Another outstanding advantage of the new system of bottom loading is the location of the coupling. Ground crew personnel have found it is easier to load into a tank 18 inches high than it is to climb 6 feet above the ground on the wing to load the spray material. ☆

One type of mobile loading equipment. Spray tank is stowed on top of large water tank and held secure with chains during highway travel.

Pumps, spray tank, loading hoses, measuring buckets, etc., are stored in built-in compartments on each side of body of this tank truck.



Spray material tank lowered into loading position. Hose hooks spray tank to inlet side of pump mounted in compartment on side of truck.



Compartments containing water control valves, 3 hp self-priming pump, three way and lever action valve. Spray tank is in stored position.

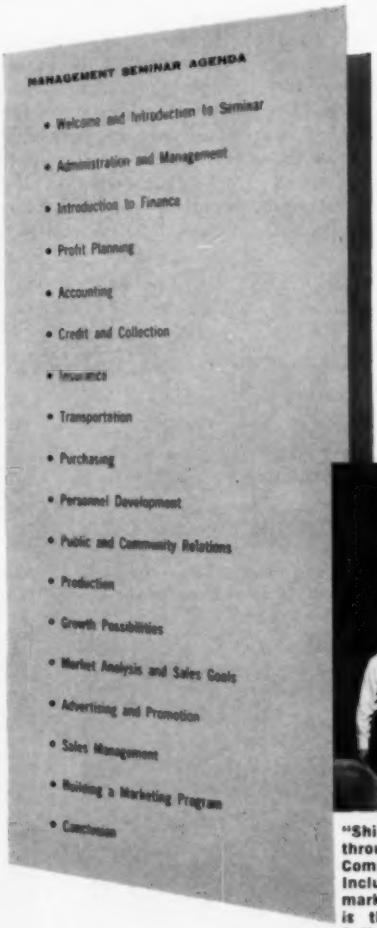
Reporting on IMC's second Fertilizer Management Seminar:

"Years of top management experience packed into 3 priceless days!"

. . . unanimous opinion of over 60 fertilizer industry executives who attended IMC's pace-setting Full Orbit demonstration of total service to customers

Guest speaker John A. Baker, Director of Agricultural Credit said, "As your most important customers, farmers appreciate the continuing research conducted by the fertilizer industry, and the constant improvement in your products."

No organization can have clear cut programs without definite objectives and rigidly defined responsibilities. Here R. J. DeLargey, V.P. of IMC's Technical Division, presents the fundamentals of managing for profit.



"Shirtsleeve" sessions took participants through complete set-up of the Makmor Company, an imaginary fertilizer company. Included management, sales, finance, market analysis, compensations. Typical is the market potential phase led by Anthony Cascino, IMC Marketing V.P.

Over 60 management representatives of the fertilizer manufacturing industry heard IMC Management officials outline and discuss the requirements for profitable management and selling.

Fertilizer company partners, presidents, general managers and other executives from all over the nation, took active part in IMC's highly successful "Managing for Profit" Seminar, July 19, 20 and 21 at Skokie, Illinois.

Top IMC management specialists – representing every important department of fertilizer operations – led practical discussions on a variety of subjects . . . ranging from "Introduction to Finance" through "Building a Marketing Program".

IMC FULL ORBIT SERVICE

Objective of this Seminar – to help fertilizer management reduce in-plant processing costs, improve marketing and merchandising activities, **manage for more volume and profit!**

Your IMC representative can fill you in on all the information covered during the Seminar.

This IMC-sponsored conference is another example of the Full Orbit concept – a concept dedicated to **Total Service** in the fertilizer industry!

FO-2-2

INTERNATIONAL MINERALS & CHEMICAL CORPORATION

Agricultural Chemicals Division, Materials Dept. • Administrative Center • Skokie, Illinois

IMC

third annual

FCMS

Yale Club — New York

November 14-15

The 1961 Farm Chemicals Marketing Seminar will feature subjects which will have an important bearing on your profit picture in the coming season. FARM CHEMICALS will assemble some of the nation's leading marketing authorities and top leaders in the farm chemicals industry to advance the latest practical thinking in the areas of: (1) International competition, (2) New products, (3) Achieving a greater profit, and (4) Public relations. Each area will be followed by a question and answer period.

The third annual FCMS will be held at the Yale Club. A block of rooms has been reserved for registrants at the nearby Biltmore Hotel. For further information or to register please contact Edward L. Meister, Jr., FARM CHEMICALS, Willoughby, Ohio.

Dr. John Fayerweather, editor of *The International Executive* and adjunct professor, School of Business Administration, New York University, will lead off the discussion on "The International Challenge." Mr. Conrad Jones, vice president, Booz, Allen, and Hamilton, Management Consultants, New York City, will discuss "The Challenge of New Products."

There will be two speakers in each of the four subject matter areas. The complete program will appear in the October issue.

Here are the highlights of the two-day Seminar:

Theme: Solving Your Marketing Problems

Tuesday, September 14

a.m. *The International Challenge* (two speakers)

Question and Answer Session

p.m. *The Challenge of New Products* (two speakers)

Question and Answer Session

Wednesday, September 15

a.m. *Make A Profit Or Else* (two speakers)

Question and Answer Session

p.m. *Public Relations and Its Importance To the Farm Chemicals Industry* (two speakers)

Question and Answer Session

PANASOL Solvents

FOR PESTICIDE APPLICATIONS

Here are three solvents with properties that make them especially suited for agricultural pesticide applications.

	PANASOL RX-4	PANASOL AN-2K	PANASOL AN-2
Type solvent	Xylene	Heavy aromatic naphtha	High solvency naphtha
Features	High aromatic content —94%	High solvency at low cost	99% aromatics, K-B value—102
	High K-B value—93	High aromatic content —82%	Excellent low temperature stability
	Narrow boiling range	Uniform high quality	Excellent for insecticide-fertilizer combinations
	Low phytotoxicity	High flash—200°F.	Light color, nonstaining

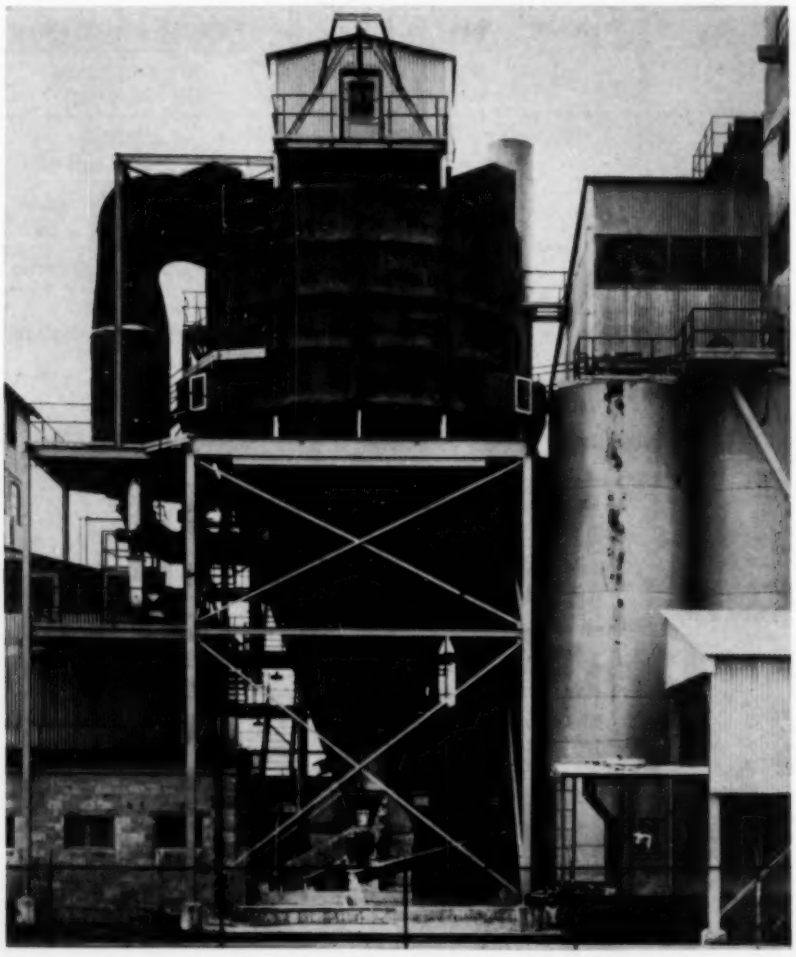
Would you like more facts about PANASOL Solvents for agricultural pesticides? Send for Bulletin No. A-2. Your inquiry will receive immediate attention.

How AAC Spray Dries Tripolyphosphate

A NEW product has been introduced to the farm chemicals industry—spray dried tripolyphosphate. American Agricultural Chemical Co. has added a spray drying process preceding the calcining of its tripolyphosphate.

Heart of the process is a 26-foot-diameter spray dryer installed at AAC's Carteret Works by Bowen Engineering, Inc., North Branch, N. J.

AAC's plunge into the tripoly field was not unexpected but no one had anticipated adoption of this process. Few producers of sodium tripolyphosphate and tetrasodium tripolyphosphate employ the spray drying step, but rather go directly to the calcining. AAC found that the additional automated step at this point of manufacture allowed better production and quality control and afforded uniform exposure of the chemicals to heat. The result? A uniform, free-flowing, detergent-grade product.



Close-up of Bowen dryer installed at AAC's Carteret Works. Constructed of stainless and carbon steel, it is 26 feet in diameter and 72 feet from the base to the top operating penthouse.

Key to the process is the Bowen dryer. Constructed of both stainless and carbon steel, it is 72 feet from base to top operating penthouse and 64 feet from chamber top to conical bottom.

Here's how it works. A solution of soda ash and phosphoric acid is fed into the dryer at pre-determined temperature and rate. This solution is atomized as it passes through the centrifugal atomizing wheel. The wheel spins at 8500 to 10,000 rpm, whirling the moisture-enclosed particles into the dryer as a fine mist. Instantaneous desiccation occurs as the droplets rapidly hurtle downward to the cooler point of ejection.

When the spherical particles leave the drying chamber as a mixture of mono- and di-sodium polyphosphate with less than three tenths of 1% moisture content, their temperature is only little above that of the introductory slip.

A battery of cyclone collectors follow the spray dryer. The material, which will subsequently be calcined, is collected at the conical base of the dryer and at the cyclones. By using these collectors and a wet scrubber, AAC is assured of high collection efficiency. Fines recovered in the wet scrubber are recycled.

After spray drying, standard industry techniques are employed. The mono- and di-sodium phosphate is calcined and converted to tripolyphosphate, then cooled and screened. After screening, the chemical, which is now sodium tripolyphosphate, is sold either in granulated or ground form, depending upon customer requirements. ☆

Now Chief Kay-Two-Oh can take time out to enjoy the Harvest Moon as he listens to the Indian Love Call with his Sweet Sioux — because he knows that it takes more than a moon, or even a medicine man, to bring in a good harvest.

Proper fertilizers are recognized in today's scientific farming methods as essential to producing bumper crops. The Chief is proud that the only business of Pee-Cee-A is supplying potash for these fertilizers. It's gratifying to have helped in the production of a bountiful harvest.

It's also gratifying to the Chief to feel that Pee-Cee-A offers the best service possible. If his scouts can be of service to *you*, let him know!

Phone, write, telex or wire our general offices in New York:
Phone **LT 1-1240**, *New York TWX* **NY 1-5386**

POTASH COMPANY OF AMERICA

P.C.A. SALT of the EARTH RED MURIATE

CARLSBAD, NEW MEXICO "AMERICA'S **CHIEF** SUPPLIER OF POTASH"

General Sales Office:
630 Fifth Avenue, New York 20, N. Y.
Midwestern Sales Office:
First National Bank Building, Peoria, Ill.
Southern Sales Office:
1776 Peachtree Building, N.E., Atlanta, Ga.
Canadian Sales Office:
2 Carlton Street, Toronto 2, Ontario

PCA Standard 60% Muriate of Potash
PCA Coarse 60% Muriate of Potash
PCA Granular 60% Muriate of Potash
Potassium Chloride (99.9% KCL min.)
Sulphate of Potash

One of highlights of meeting was panel discussion featuring (left to right) Sam Tisdale as moderator; Mel Wierenga, California Chemical Co.; and Murray Rennick, Rollo Feed Mills. (Not shown is Kenneth S. Bates, University of Arkansas, who also participated.)

A second panel discussion featured (left to right) John E. Hutchinson and W. F. Bennett, both of Texas A & M.; John A. Cox, Louisiana State University; and Woody N. Miley, University of Arkansas.

FC Report on

Southwestern Fertilizer Conference

SURGERY is needed in the fertilizer industry to cut out old, worn-out methods. This was the consensus of opinion of 300 members of the southwestern fertilizer industry following their annual conference at Galveston, Texas, July 19th - 22nd.

Speakers told fertilizer manufacturers that they must streamline their organizations to develop new, profitable business based on new technology in fertilizer manufacture and changing needs of farm customers.

Agricultural extension experts from Texas, Louisiana, Arkansas, and Oklahoma reported that farmers are not using nearly enough fertilizer for optimum yields and dollar returns. For instance, Dr. W. F. Bennett, Extension Soil Specialist at Texas A and M, presented figures showing that Texas farmers are using only 13% of the nitrogen, 12% of the phosphate, and 7% of the potash that is needed.

Using figures to prove his point, Dr. Bennett said the present return of $71.4 million to farmers from their use of fertilizers could be increased to a tremendous $587 million if fertilizers were used in the amounts recommended by state agronomists.

On the dealer level, Murray Rennick, Rollo Feed Mills, Rollo, Mo., said that dealers must be more aggressive in selling. Stating that there will be fewer dealers in years ahead, Rennick said the dealers who survive will be larger and will perform more services for the farmer. He advised dealers to diversify and to explore any potentially profitable venture.

Many dealers have no idea where they stand financially because they have no adequate records to guide them. Dealers have got to make a profit, he cautioned, taking into account such factors of depreciation, interest on investment, and overhead.

Speaking out against inefficient fertilizer dealers, Rennick said the main faults of most dealers are poor management ability, little enthusiasm, poor salesmanship, and a negative attitude towards their business.

Mel Wierenga, Vice President and Manager of Marketing of the California Chemical Company, stated that the fertilizer industry cannot be proud of the job it has done in merchandising its products. Little imagination has been used in selling, he said. Wierenga pointed out that growers are interested in the results, not the fertilizer; yet the fertilizer industry has consistently based its appeal on price. This has encouraged growers to shop for better deals, and the industry has been willing to condone and, in some cases, actually encourage this practice.

Mel Wierenga, vice president and manager of marketing for Ortho Division, California Chemical Co., attacks problem of "selling the potential."

Wierenga said that the fertilizer industry has relied on the colleges and experiment stations and the trade associations to do much of the selling job. He explained the "break the yield barrier" program, which has been established by Ortho to develop new fertilizer sales.

Moderator Sam Tisdale, in summing up this panel discussion on how to achieve selling goals, expressed these points:

1) Experiment stations must come up with data showing how to produce higher yields under a wider range of soil and climatic conditions.

2) Extension service must intensify educational efforts and set up production and net income goals that will challenge the best farmers.

3) Soil test recommendations must be adjusted to the yield increases desired by the farmer.

4) Industry must provide more service to its customers. This includes advice on a complete production program embracing seed, pesticides, fertilizer placement, and other factors, as well as proper amount and ratio of plant nutrients required.

5) The industry must sell on the basis of the farmer's need instead of on the basis of some product they are trying to get rid of because they are in oversupply.

6) Industry must develop salesmen with special experience.

7) The industry must decide to make a profit and adjust its sales program accordingly.

It may not look it but Jack Criswell, Agricultural Ammonia Institute, and J. F. Fudge, State Chemist of Texas, are really engaged in friendly conversation.

J. E. Metzger, of Barnard & Leas Mfg. Co., was among the 300 people attending the Southwestern Fertilizer Conference.

Millard S. Perkins (left) and Stanely Hackett, SFC charter members, attended first conference held in 1926.

The men from Texas A. & M. hold their own conference. Left to right, H. T. Blackhurst, D. R. Paterson, B. G. Hancock, and C. C. Singletary.

Taking time out for relaxation is Paul Truitt, who represented National Plant Food Institute.

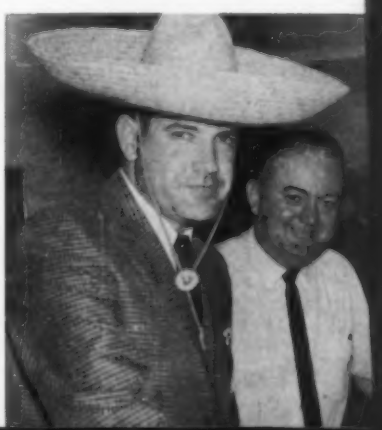
From Pasadena (Texas that is) came Les Warren to represent Rohm & Haas at the conference.

Bill Burns (center), International Minerals, chats with Neal McAllister, Goodpasture Grains, & wife.

Jack Herr (right) Hooker Chemical Corp., looks very serious as he talks with David J. Raden (left) and W. P. Dean, both of Swift & Co.

Taking time for talk (l to r) C. D. Goodale, W. M. Hemeter, Commercial Solvents; A. Cooke, Swift & Co., J. N. Cronk, Commercial Solvents.

Sombreros were the fashion at the gala International Minerals & Chemical Corp. party. **Left:** Gordon Cunningham, Tennessee Corp., perched his sombrero at a jaunty angle. **Lower left:** Don't know what E. K. Chandler (right), Best Fertilizers is saying but Dr. Fielding Reed, American Potash Institute, seems to be listening intently. **Center, below:** N. P. Morgan (right) takes time out from his duties as conference chairman to talk with his wife and Mr. & Mrs. Roy Cooke (left), Phillips Petroleum. **Right:** Enjoying the party are B. B. Turner (left) and Hal Hoffman, both of IMC.



LOSSES DUE TO IN-PLANT SHRINKAGE

By VINCENT SAUCHELLI
NPFI Consultant

An NPFI task force of seven studied the problem of losses of plant food in processing fertilizers; shrinkage varied widely, due largely to different formulating policies.

LOSSES of plant food in processing fertilizers are being recognized as an important factor in the profitable operation of the fertilizer plant. Until about 15 years ago, shrinkage losses in manufacturing were comparatively small. Generally, the practice of the industry was to figure a 2% shrinkage as adequate to cover all losses in the plant. Since then, with the upgrading in the plant food content of fertilizers and the new technology involving ammoniation and granulation, the process losses in plant food have grown into a major problem.

In August, 1958 the NPFI was asked by several of its members to study this troublesome problem. It was pointed out that any data on industry performance in measuring and reducing the shrinkage would be helpful to the industry, at least as a means of measuring individual company data as being above or below the general average.

The Institute proceeded to organize a Task Force to study the problem, prepare a questionnaire, and assemble and tabulate the answers.

SEVEN EXPERTS STUDY PROBLEM

The Task Force on In-Plant Shrinkage comprised the following: Dale C. Kieffer, Smith-Douglass Co.; J. E. Reynolds, Davison Chemical Co. Division; W. R. Grace & Co.; M. D. Sanders, Swift & Co.; Rodger C. Smith, Eastern States Farmers' Exchange; Albert Spillman, Fertilizer Manufacturing Co-operative, Inc.; Philip E. Stone, Virginia-Carolina Chemical Corp., and Vincent Sauchelli, (NPFI) Chairman.

This Task Force met in Washington on April 30, 1959. The subject was thoroughly discussed and the consensus was that a careful study of the losses was warranted. They recommended that a suitable questionnaire be prepared as the first or exploratory phase of the study. The replies would suggest the scope of the second phase. In order to assure co-operation it was emphasized all releases and references to that information in the questionnaire would be by code and never by company name.

TWO TYPES OF LOSSES

For study purpose shrinkage in fertilizer plants was to be divided into *intentional* and *unintentional* losses.

Intentional losses were divided into four categories: 1) formulated free ammonia nitrogen loss during mixing operation, 2) plant food overage formulated as safeguard against deficiencies, 3) weight overage at the time of packaging as a safeguard against short weights, and 4) other intentional losses.

Unintentional losses were divided into six groups: 1) nitrogen loss as ammonia and fumes while mixing, 2) dust losses while mixing, 3) leakage in liquid lines, 4) overweight at the time of packaging, 5) moisture losses unaccounted for in formulation, and 6) others.

The questionnaire was mailed on July 8, 1959, to members of the Institute, as well as nonmembers in order to make the study more comprehensive.

About 45 companies replied to the questionnaire. Many of the replies represented averages from multiplants operated by the one company.

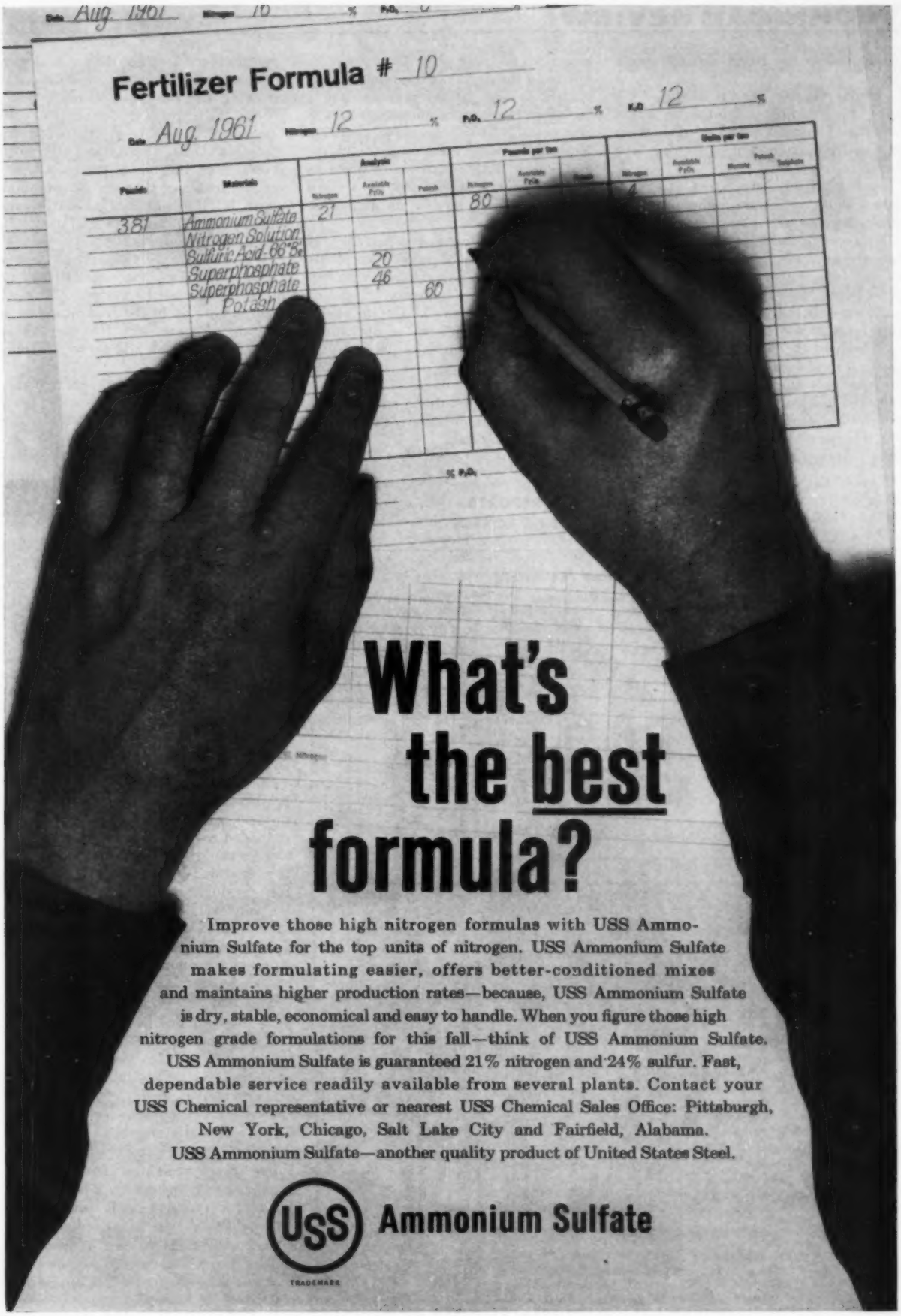
THE REPLIES

Summaries of the replies to the questionnaire are in the accompanying tables. One set refers to losses in the production of granulated or semi-granular fertilizers; the other, to non-granulated or so-called pulverized fertilizers.

Dale C. Kieffer, Smith-Douglass, reported that the TVA type continuous ammoniator is used extensively in granulating plants. However, it apparently has not been incorporated in many production units turning out only pulverized fertilizer. In granular plants, it is used both as an ammoniator and a granulator.

"Since nitrogen losses are greatest in plants producing granular fertilizers, it could be reasoned that the old batch mixers are still the most efficient.

"This is hardly a fair assumption," Kieffer said, "because more liquid, particularly anhydrous ammonia, is introduced along with acids in the granular plants to produce heat, and to aid in granulation. The conditions most favorable to granulation are not always ideal for best ammonia absorption. In general, this possibility is the most important reason for the difference of about 2.5% more nitrogen loss in the granular plants as


Fertilizer Formula # 10
Date Aug. 1961 Nitrogen 12 % P2O5 12 % K2O 12 %
Analysis
Pounds per ton
Units per ton
Pounds
Materials
Nitrogen
Available P2O5
Potash
381
Ammonium Sulfate 21
Nitrogen Solution
Sulfuric Acid-66°Be
Superphosphate 20
Superphosphate 46
Potash 60
80
What's the best formula?
Improve those high nitrogen formulas with USS Ammonium Sulfate for the top units of nitrogen. USS Ammonium Sulfate makes formulating easier, offers better-conditioned mixes and maintains higher production rates—because, USS Ammonium Sulfate is dry, stable, economical and easy to handle. When you figure those high nitrogen grade formulations for this fall—think of USS Ammonium Sulfate. USS Ammonium Sulfate is guaranteed 21% nitrogen and 24% sulfur. Fast, dependable service readily available from several plants. Contact your USS Chemical representative or nearest USS Chemical Sales Office: Pittsburgh, New York, Chicago, Salt Lake City and Fairfield, Alabama.
USS Ammonium Sulfate—another quality product of United States Steel.
USS
TRADEMARK
Ammonium Sulfate

compared to the batch mixing operations."

Under similar conditions the TVA type ammoniator undoubtedly would compare favorably—and possibly show a slightly higher efficiency—than the batch mixer.

Apparently, the operators of granulation units anticipate higher nitrogen losses because most companies reported allowances in their formulas which, on the average, amounted to about 3.4% of the total nitrogen guarantee as an anticipated loss. This leaves only 1.5% nitrogen loss that is unintentional and, to a large measure, unexplained.

Based on the in-plant shrinkage reports, it would seem that dust losses contributed only a minor part to the overall material loss in granular plants as compared to non-granular operations. Basis for this conclusion is found in the figures pertaining to phosphates and potash. Both of these plant foods must be lost from the dryers, ammoniators, and coolers as dust. In non-granular plants the overall loss in phosphate was 2.74% and potash, 2.15%. In granular plants phosphate losses amounted to 2.85% and potash, 2.54%. The major problem in the granular plant centers around nitrogen losses—largely as ammonia, smoke, and fumes.

It should be emphasized that there is a great deal of variation between plants and companies, particularly with respect to nitrogen recovery. Some of these differences may be due to variations in overall efficiency of operation, but probably more of it is due to differences in formulating policies, i.e., the use of higher percentages of anhydrous ammonia versus solutions and solids—and higher ammoniation rates on the phosphatic materials.

It must be expected that the phosphate losses will exceed the potash losses to some extent because, in addition to handling and dust loss on phosphates, there is the additional possibility of conversion of available P_2O_5 to citrate insoluble forms. There is slightly more reversion in the plants producing pulverized fertilizer than in the granular plants, but the difference is relatively insignificant. About .3 to .5% of the P_2O_5 loss is due to reversion.

With the exception of nitrogen losses at the ammoniator, substantially all of the shrinkage at the various points of manufacture is in the magnitude of a fraction of a per cent. However, these small fractions can add up to a significant cost.

Based on the survey report, plants producing granular fertilizers lose from 4 to 6% of the nitrogen; 2 to 4% of the phosphate; and 2 to 3½% of the potash input; whereas, the plants producing non-granular fertilizer lose from 1½ to 3% of their nitrogen; 2 to 3% phosphate; and 2 to 3% of the potash input.

"Granulation in this country is still comparatively new to most fertilizer manufacturers," Kieffer pointed out, "and it can be expected that the more complicated a process becomes, the more opportunity for shrinkage. However, there is room for improvement, particularly in nitrogen recovery in the granular plants. Since the fertilizer industry is highly competitive, and no company can afford to overlook losses in any magnitude, the industry will show an overall improvement."

R. G. Powell, International Minerals & Chemical Corp., reported that some obvious sources of losses are: Materials unloaded either to storage or to operation; materials weighed and/or metered to operation; materials lost in processing; product conveyed to storage; product conveyed to bagging and/or bulk loading facilities; and shipping.

He said that materials handling equipment accounts for a major portion of plant losses. As raw material moves from car to plant, the first spillage is from the front-end loader. This spillage loss is caused by any or all of the following: Overloading; excessive speed; poor routing; inexperienced handling; and poor attitude about the job.

Powell said that conveyor spillage can be corrected. He suggested the following: Eliminating sharp inclines; using rubber or canvas skirts at feed points; repairing or replacing worn belting; selecting adequately sized belts; interlocking belt drives with feed and discharge equipment; aligning head and tail pulleys; and using self-cleaning scrapers if handling moist or sticky materials. ☆

IN-PLANT SHIRNKAGE REPORTS
SUMMARY OF PERCENTAGE LOSSES

Table 1: PULVERIZED FERTILIZERS

Company	Total Intentional			Total Nonintentional			Total Loss for Year		
	N	P_2O_5	K_2O	N	P_2O_5	K_2O	N	P_2O_5	K_2O
B	—	—	—	0.85	1.68	5.49	0.85	1.68	0.85
G	5.0	—	—	—	—	—	4.0	3.10	2.2
M	2.54	1.25	0.52	0.99	1.53	1.89	3.53	2.78	2.41
N	1.0	1.0	0.0	0.1	0.9	0.9	1.1	1.9	1.9
O	1.5	0.5	0.5	—	—	—	1.5+	0.5+	0.5+
Q	—	—	—	—	—	—	1.8	—	1.8
R	—	—	—	—	—	—	6.8	—	0.1
U	0.2	0.5	0.2	—	—	—	0.2	0.5	0.2
V	0.013	0.0	0.012	—	—	—	0.013	0.0	0.012
Y	—	—	—	4.0	4.0	4.0	4.0	4.0	4.0
Z	—	—	—	—	—	—	4.06	3.31	0.53
A2	1.0	4.0	3.0	1.0	4.0	1.0	2.0	8.0	4.0
A3	2.5	3.0	4.0	—	—	—	2.5	3.0	4.0
A6	0.08	0.08	0.08	—	—	—	4.21	1.46	4.23
A9	—	—	—	—	—	—	0.99	2.70	3.89
A10	1.0	2.25	1.0	1.8	1.7	2.9	2.8	3.95	3.9
A13	1.25	2.75	0.75	1.1	1.1	0.6	2.35	3.85	1.35
A14	0.0	0.5	0.0	0.4	2.5	2.2	0.4	3.0	2.2
A16	—	—	—	—	—	—	1.27	0.10	0.57

Table 2: GRANULAR FERTILIZERS

Company	Total Intentional			Total Nonintentional			Total Loss for Year		
	N	P_2O_5	K_2O	N	P_2O_5	K_2O	N	P_2O_5	K_2O
A	6.0	4.0	4.0	—	—	—	6.0	4.0	4.0
C	3.5	2.5	2.5	—	—	—	3.5	2.5	2.5
D	2.81	0.14	0.01	5.84	3.02	3.8	8.65	3.16	3.81
D†	2.0	0.01	0.0	2.69	0.98	0.65	4.69	0.99	0.65
E	5.85	2.85	3.85	0.045	0.055	0.05	5.90	2.90	3.90
F	2.5	1.0	0.25	4.85	1.5	2.0	7.35	2.5	2.25
H	0.5	2.0	1.0	2.0	1.0	1.0	2.5	3.0	2.0
I	3.0	6.0	3.0	0.75	0.5	1.0	3.75	6.5	4.0
K	3.2	1.4	1.6	1.1	0.4	0.0	4.3	1.8	1.5
K†	1.5	1.6	1.6	0.0	0.8	0.0	1.5	2.4	1.6
L†	0.14	0.11	—	3.92	2.92	2.55	4.06	3.03	2.55
O	0.25	0.25	0.25	0.5	0.4	0.3	0.70	0.65	0.55
P	3.5	2.50	2.5	1.25	—	—	4.75	2.50	2.50
S	5.0	0.05	—	8.0	2.0	2.0	13.0	2.05	2.0
T	5.0	2.5	2.5	—	—	—	5.0	2.5	2.5
X	5.0	2.0	1.0	2.5	1.5	1.5	7.5	3.5	2.5
A4†	—	—	—	1.59	1.37	1.89	1.59	1.37	1.89
A7	3.43	1.78	2.12	2.20	2.12	1.95	5.63	3.90	4.07
A8a	4.0	2.25	2.25	1.0	0.75	0.75	5.0	3.0	3.0
A8b	5.25	2.25	2.25	1.75	1.75	1.75	7.0	4.0	4.0
A8c	6.25	2.25	2.25	2.75	0.25	0.25	9.0	2.0	2.0
A11	3.0	2.0	2.0	3.3	2.53	0.26	6.3	4.53	2.26
A12	2.0	2.0	2.0	0.47	0.40	0.15	2.47	2.4	2.15
A15	—	—	—	—	—	—	6.67	3.17	3.51
A16	—	—	—	—	—	—	5.25	2.58	2.03

† Indicates semi-granular.

The Slurry

MAN, WHAT A JOB!

The Slurry has a tip on a new job that any red-blooded American male would jump at a chance of landing. All you have to do is sit and watch a lot of females wiggle. Interested? Here's the scoop.

The department of entomology at Cornell University, Ithaca, N. Y., has discovered that the best way to tell male and female insects apart is by their movements. Dr. Robert Patton explains it this way:

"If you were to see a man and woman walking down the street wearing slacks, you could probably tell them apart just by their gait. It's the same with insects —the male's movements are different from the female's."

They've even developed a machine called an aktograph that draws pictures showing how often and how hard an insect kicks, walks, or jumps.

Of course, Cornell's scientists use this machine for more than measuring wiggling. The aktograph is used to find out how effective neuromuscular chemicals are as insecticides. When an insect begins twitching and shaking, the scientist knows the chemical is taking effect. By studying the graph-like line the instrument draws the insect specialist can tell almost the exact moment intoxication sets in.

So, if wiggle-watching is your favorite pastime, better file your application with the department of entomology now.

IT'S THAT TIME

Poor old New York City. It seems that every September it gets invaded. Last year, it was the Bluster Twins—Khrushchev and Castro — scattering cavier and chicken feathers over the streets of Manhatten. And to make matters worse, Khrushchev was suffering from "Romeo Fever." Everytime he saw a balcony, he had to make a speech.

Now, as they say in show biz, the Bluster Twins are a hard act to follow. But *The Slurry* will bet its hat that the 1961 invasion of Manhatten will grab quite a few headlines—and they'll be far more pleasant to read.

The Waldorf Astoria Hotel will be the battle headquarters. There, the invaders from all over the United States will meet to discuss strategy and ways to win public support for their cause.

It's a story worth telling. These "invaders" are all members of the National Association of County Agricultural Agents. They've locked the office door and headed, suitcase in hand, to this annual meeting to spend five days comparing notes, chatting, and listening.

Some of the listening will be worthwhile not only to the county agent but to the farm chemicals manufacturer. Take, for example, the story of how Jim Taylor, a grower in Quitman, Ga., made over $1000 from a simple investment of $20—all because of a tip from his county agent.

For several years Taylor had noticed his yields were dropping off. A diversified grower, his operation consists of spring, fall, and winter vegetables with three crops frequently being planted on the same land during a year. Like most growers, he sent his county agent a SOS.

With the help of the area extension horticulturist, a demonstration was set up. They divided a 4-acre field of squash in half. Two acres received Nemagon mixed in the fertilizer at the rate of 33 pounds of 30% granules per acre. On both fields the fertilizer was applied 6 inches deep under the row immediately prior to planting.

In 12 pickings the 2 acres treated with Nemagon yielded 518 bushels of squash as compared to 152 bushels from the other 2 acres. That additional 366 bushels of squash sold for $1008. From his original investment of $20 for the nematocide, Turner reaped $988.

The Slurry is ready to admit that the Bluster Twins talked louder than any of these 1961 invaders but what they said didn't amount to a "hill of squash."

MONARCH SPRAYS

This is our Fig. 645 Nozzle. Used for Scrubbing Acid Phosphate Gases. Made for "full" or "hollow" cone in brass and "Everdur." We also make "Non-Clog" Nozzles in Brass and Steel, and

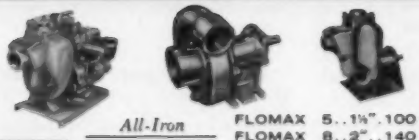
Stoneware Chamber Sprays

now used by nearly all chamber spray sulphuric acid plants.

CATALOG I

MONARCH MFG. WORKS, INC.
2501 East Ontario Street, Philadelphia 34, Pa.

FLOMAX PUMPS...
ALL-IRON for Liquid Fertilizer
ALL-ALUMINUM for Nitrogen Solutions
with STAINLESS STEEL studs, nuts, impeller sleeve and shaft seal



All-Iron or All-Aluminum

FLOMAX 5..1½"..100 GPM
FLOMAX 8..2"..140 GPM
FLOMAX 10..2"..200 GPM
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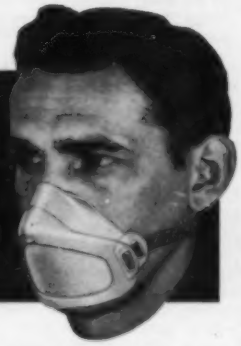

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PATENT REVIEWS *By Melvin Nord*

SOIL STABILIZATION

U. S. Patent 2,891,162, issued April 25, 1961 to Donald T. Davidson and Robert L. Nicholls, assigned to Iowa State College Research Foundation, Inc., provides a method of stabilization of soil containing negatively-charged mineral particles, with an organic derivative of ammonia and an acrylate polymer. These ingredients are used to coat the mineral particles; being applied in the amount of up to about 5 parts per 100 parts of soil. The treated soil is then compacted.

HERBICIDES AND PLANT GROWTH REGULANTS

U. S. 2,980,525, issued April 18, 1961 to Johannes T. Hackmann, and Pieter Ten Haken, assigned to Shell Oil Co., discloses a class of herbicides of

$$NH_2\text{-}C(=O)\text{-}O\text{-}CHClCH_3$$

the type NH_2-C-O-$CHClCH_3$ and related compounds.

U. S. 2,980,700, issued April 18, 1961 to Gerald W. Probst, and assigned to Eli Lilly & Co., discloses a process for the production of a purified alkali metal salt of gibberellic acid.

U. S. Patent 2,981,619, issued April 25, 1961 to Melvin J. Josephs and assigned to Dow Chemical Co., provides a method for the selective control of small seeded grasses and broadleaf weeds, by applying a 4, 6-disecondarybutyl-d-(dialkylamino)-o-cresol compound.

U. S. Patent 2,983,595, issued May 9, 1961 to George A. Saul, Joseph W. Baker, and Kenneth L. Godfrey, assigned to Monsanto Chemical Co., discloses a method of weed control, using phosphoramidic acid mixed with anhydrides.

U. S. Patent 2,984,559, issued May 16, 1961 to John J. D'Amico and assigned to Monsanto Chemical Co., provides a method of destroying vegetation with haloalkyl thionocarbamates.

TRACE ELEMENT FERTILIZERS

U. S. Patent 2,983,594, issued May 9, 1961 to Walter Jost, discloses a method of fertilizing agricultural land with waste products from the copper-fabricating industries, e. g. copper grinding dust, copper hammer scale, and lower copper oxides. These products have a large surface area and contain copper and traces of elements such as zinc, cobalt, manganese, molybdenum, boron, and iron. They are applied without further treatment to the soil.

PESTICIDES

U. S. 2,977,282, issued March 28, 1961 to Reed A. Gray and assigned to Merck & Co., discloses a composition useful for protecting growing plants against infectious organisms, containing an antibiotic and a polyhydroxy alcohol.

U. S. 2,979,434, issued April 11, 1961 to Philip H. Santmyer and assigned to Monsanto Chemical Co., discloses certain polyamine mematocides.

U. S. 2,979,436, issued April 11, 1961 to Arthur L. Fox and Irving J. Krems and assigned to Colgate-Palmolive Co., describes a method of treating tomato plants to prevent early blight disease, utilizing an aqueous higher alkyl benzene sulfonate salt of a heavy metal of the third period.

U. S. 2,980,577, issued April 18, 1961 to Morris L. Nielsen and assigned to Monsanto Chemical Co., describes a method of controlling nematodes with a quaternary ammonium thiocarbonate reaction product.

U. S. 2,980,578, issued April 18, 1961 to Walter W. Abramitis and Edward A. Tehle, Jr., assigned to Armour & Co., discloses a fungicide having the general formula

$$H_2N\text{-}C(=NH)\cdot HX$$

where R is an alephatic hydrocarbon radical (8-18 carbons); X is Cl or Br.

U. S. 2,980,579, issued April 18, 1961 to Sidney B. Richter and Harold J. Wahlborg, assigned to Velsicol Chemical Corp., discloses acylimino—2, 2, 4, 4, 5 — pentachlorocyclopentanones as nematocides and fungicides.

U. S. 2,980,580, issued April 18, 1961 to William Klomparens and assigned to The Upjohn Co., discloses the fungicidal properties of cycloheximide acetate.

U. S. Patent 2,984,600, issued May 16, 1961 to Dexter B. Sharp and assigned to Monsanto Chemical Co., provides a method of protecting cereal plants against rust fungi, with the phenyhydrazone of a saturated hydrocarbon ring mono-ketone having from 5 to 18 carbon atoms.

READER SERVICE

FREE INFORMATION to help you solve fertilizer, pesticide problems

Chemicals

BASE INSECTICIDE

Formulators and manufacturers will be interested in a six-page technical bulletin published by Fairfield Chemicals, Food Machinery & Chemical Corp., on Sevin, its new base insecticide. This new product is an active residual ingredient of pressurized spray concentrates, and liquid fly and roach sprays. The bulletin lists Sevin's physical properties and describes its application. For more details, simply

CIRCLE 176 ON SERVICE CARD

SPRAY FOR COTTON

Pennsalt Chemicals has just issued a brochure on its special low-line sprayable calcium arsenate, used to control boll weevil, leaf worm, and bollworm. Penco Spra-Cal is recommended for use on cotton only. Included in the brochure are instructions for mixing, its antidote, and the legal responsibility involved. For more details, just

CIRCLE 177 ON SERVICE CARD

REDUCE CAKING

Pesticide formulators will want to learn more about Micro-Cel, a new synthetic calcium silicate which is chemically inert and is compatible with nearly all toxicants. Produced by Johns-Manville, Micro-Cel's unique structural characteristics reduce caking, improve flowability, increase suspendability, and extend shelf life. To learn more about this new synthetic calcium silicate, just

CIRCLE 178 ON SERVICE CARD

CHEMICAL MANUFACTURER

Chemical processing industries will be interested in the recent 20-page brochure published by the Hodag Chemical Corporation. It describes their products, services, laboratory and manufacturing facilities, as well as their future plans for expansion. Developers and basic manufacturers of surface active chemicals, Hodag's products include dispersing agents, emulsifiers, spreading agents, release agents, and wetting agents. For a copy of the brochure

CIRCLE 179 ON SERVICE CARD

Process Equipment

AIR POLLUTION MEASUREMENT

Scientific and Process Instruments Division of Beckman Instruments, Inc. has issued a booklet describing their line of Acralyzers which are designed specifically to monitor and record low concentrations of oxidants, oxides of nitrogen, or sulfur dioxide in the atmosphere. Some models are portable, and all are easy to use and read. In chemical plants, they will aid in complying with control regulations. To get this booklet, just

CIRCLE 180 ON SERVICE CARD

RIBBON BLENDER

A four-page brochure describing its line of ribbon blenders has been published by Munson Mill Machinery Co. Precise machining gives maximum mixing force with minimum hp. Engineered for simplified maintenance, these blenders are made for a long, useful life. Easy to clean because of a clever designing, there are no square corners or flat angles to hold chemicals from the mixing motion or to retain them so as to contaminate later batches. For more information, just

CIRCLE 181 ON SERVICE CARD

Materials Handling

ROTARY FEEDER

Beaumont Birch Company has developed a rotary feeder for feeding bulk materials under high differential pressures. Safety features include provision for motor release in case of foreign material being encountered, a micro switch that sounds an alarm when jamming occurs, and a tapped hole which can be furnished in the feeder body to relieve high plus pressures in the returning empty rotor pockets before they enter the loading point. All types of the best in metals make this feeder a good one for the chemical industry. For a well illustrated booklet, just

CIRCLING 182 ON SERVICE CARD

FOLD-AWAY TANKS

A collapsible tank which permits any truck to do the work of both a dry cargo carrier and a tank truck is the Fold-Away tank manufactured by Gates Rubber Company. It is easy to unfold, fill, unload, store away, and it saves the cost of tank bed equipment. It can also be used as a storage tank by itself. Of sturdy construction, it is ideal for carrying liquid fertilizers and other solutions. When not in use, it requires just a few cubic feet of storage space. The lining is a corrosion resistant rubber that withstands the harmful effects of the solutions it contains. The reinforcement is of heavy tire cord, while the cover is made of a specially-compounded rubber. Tanks are available in six standard sizes, from 500 to 3250 gallon capacities. More information is in the booklet which you can get by

CIRCLING 183 ON SERVICE CARD

COLD-RESISTANT TANK LINER

In addition to the five special tank liner sheet materials, Flexi-Liner Company has recently announced a sixth. Named the NEW J-22, it permits the installation and use of the Flexi-liner at temperatures as low as –43°F. It is 40 mils in thickness. Other tank liner sheets include J-22, a general purpose one for holding chemical solutions; JT-32, which has chemical resistance to solvents and concentrated strong inorganic acids; T-1, with high temperature resistance up to 200°F. for most chemicals; F-1, which is food-approved; and A-1, an abrasion-resistant laminate. Find out more about this Flexi-liner by

CIRCLE 184 ON SERVICE CARD

Packaging

EXTENSIBLE PAPER

In a new booklet Clupak, Inc., tells what extensible paper is, why it is important, how it differs from conventional paper, and gives the reasons why it is better. Also included is information on extensible paper coated with polyethylene, asphalt or wax; impregnated with wet strength resins; and bleached or colored. It can be used in industry, business, or the home. To get this booklet,

CIRCLE 185 ON SERVICE CARD

Application Equipment

NO CHEMICAL DRIFT

A new bulletin issued by the Ezee-Flow Division of AVCO Distributing Corporation describes their new granular type of chemical applicator for herbicides and insecticides. These two chemicals can be applied separately or together. The applicator features accurate metering, and can do four jobs at one time: planting, fertilizing, controling weeds, and killing insects. With granular chemicals, no water is needed, thus cutting down on fittings and making maintenance costs lower. Chemical drift is eliminated. To find out more about this applicator, just

CIRCLE 186 ON SERVICE CARD

CENTRIFUGAL PUMPS

Marine Products Company lists its line of straight centrifugal pumps in a brochure recently issued. The pumps are useful in aerial spraying and feature high efficiency operation. There are two ball bearings in every MP straight centrifugal pump for liquid fertilizer. The all iron pumps have stainless steel shafts for durability. The mechanical seal prevents leakage through the stuffing box. The pumps are so constructed that you can remove the body assembly without disturbing the piping. For more details, simply

CIRCLE 187 ON SERVICE CARD

See page 36 for information on these Reader Service Numbers:

188—Stretch Your Profits
189—Positive Measurement
190—It's Better—It's Easier
191—Stainless Steel

To use Reader Service Card on page 10: Circle number of literature you want. Print or type your name, position, company and address. Clip and mail.

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18—Pfaudler 1250 gal. glass-lined reactors.
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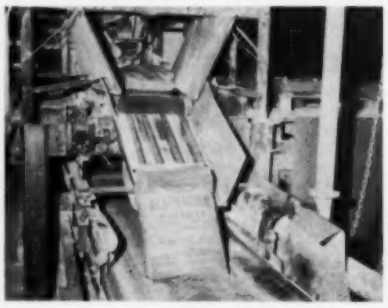
American Cyanamid is using a new bag which is saving them $4 to $5 per thousand bags. Made of extensible paper, the new bag gives maximum protection. The extensible paper is uncreped, but is compacted and compressed in production giving the product give or stretch. American Cyanamid carefully tested various types of bags and from their experience, the extensible bag has performed the best.

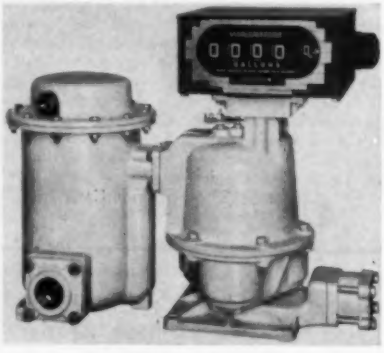


The Clupak bag is treated with resin so that it retains a greater portion of its strength when wet than it would retain untreated. The extra toughness of Clupak provides safety, and because of built-in strength, less ply is needed—reducing weight and cost. For detailed information, write Bill Graves, Clupak, Inc., 530 Fifth Ave., New York 36, N. Y. or

CIRCLE 188 ON SERVICE CARD

POSITIVE MEASUREMENT

A new displacement type meter that will measure liquid fertilizer in your mixing plant or on your trucks and field applicators has just been introduced.



This new meter will handle liquids at speeds up to 60 gallons per minute. The new meter is built of stainless steel to withstand corrosion. A predeterminer and ticket printer are available.

The Series 600 meters carry a one-year warranty against defects in workmanship or material. You'll want the facts on this superior meter. Just write J. M. Huguenard, Tokheim Corporation, 1602 Wabash Ave., Fort Wayne 1, Ind., or

CIRCLE 189 ON SERVICE CARD

IT'S BETTER — IT'S EASIER

This picture shows how easy it is to use the new IMC sampling tube. IMC

recently patented the tube, but is making it available royalty free to all FARM CHEMICALS readers.

The new tube overcomes clogging and the sample receiving slot has been widened to receive the proper proportion of all particles. The new unit is particularly effective on granular materials. For full information, write Frank J. O'Neill, International Minerals & Chemical Corporation, Old Orchard Road, Skokie, Ill., or

CIRCLE 190 ON SERVICE CARD

STAINLESS STEEL

It makes sense to use stainless steel in handling custom mixed liquid fertilizers. Dick and Dave Edwards, down in

Monmouth, Ill., have found this to be true from actual experience. Now that they have turned to stainless steel, they are serving their customers more efficiently and in less time.

For liquid fertilizer or chemicals, stainless is the right answer. Don't make a costly mistake in your operations. Write United States Steel Corporation, Room 6334, 525 William Penn Place, Pittsburgh 30, Pa., or

CIRCLE 191 ON SERVICE CARD

NEWS OF THE INDUSTRY

Spencer Chemical Co. has a new subsidiary—Perkins Glue Co. Spencer will acquire all the assets of Perkins in exchange for Spencer common stock. Perkins will be operated as a wholly-owned subsidiary with the present Perkins management maintaining the active direction of the firm's business.

A 28,000 barrel-a-day delayed coking unit will be built by **Texaco Inc.** at its Lockport, Ill., refinery. Construction began last month and the new unit is planned to go into operation in mid-1962.

Diamond Alkali Co. has acquired all the stock of Chemical Process Co., Redwood City, Calif., formerly held by Commercial Solvents Corp. This purchase brings the total number of Chemical Process Co. shares under Diamond's control to more than 80%.

September 1 was moving day at **American Cyanamid Co.'s** Agricultural Division. The executive offices, as well as research and development groups, have been moved to the company's new Agricultural Center located on a 640-acre tract in West Windsor Township, N. J. Approximately 500 people will be employed at the Center when it is fully staffed.

Changes are taking place at **Monsanto Chemical Co.** Monsanto's Inorganic Chemicals Division has revamped part of its marketing organization. Technical service personnel who formerly worked on both customer service problems and development of new markets will now concentrate on customer assistance as members of various specialized product sales groups. A market development group with the responsibility of expanding division product sales into new uses and new areas of marketing has been formed. James C. Barnett, has been appointed market development manager, and Roger G. Ditzel, supervisor of market development.

Tenneco Oil Co. has entered the petrochemical field with its new aromatics production facilities just completed at Chalmette, La. Tenneco will now produce benzene, ethylbenzene, orthoxylene, mixed xylenes, toluene, and heavy aromatic solvents. The new facilities include a 6000 barrel-per-day catalytic reformer, a 2200 barrel-per-day extraction plant, and fractionation units capable of producing annually 22 million pounds of orthoxylene and 20 million pounds of ethylbenzene. Tenneco is the producing, refining, and marketing division of Tennessee Gas Transmission Co.

A corn fertilizer plot on the Waddie Moss farm near Union City, Tenn., is being closely inspected by a team of agricultural experts. Looking over the plot are (left to right kneeling) Moss; Jim Turner, U. S. Borax and Chemical Corp. agronomist; Joe Matthews, extension service agronomist, Nashville; Joe Burns, extension service agronomist, Knoxville; (left to right, standing) Tom McCutchen, Obion county agricultural agent; Dr. J. Fielding Reed, southern director, American Potash Institute, Atlanta, Ga.; Dr. Jim Brown, agronomist, National Plant Food Institute, Auburn, Ga.; Dr. Robert L Beacher, southern director, NPFI, Atlanta, Ga.; and Earl Bailey, agronomist with American Potash Institute.

Amoco Chemicals Corp., through its affiliate, Amoco International, S. A., and Algemene Kunstzijde Unie N. V. have formed a jointly owned subsidiary to manufacture dimethyl terephthalate (DMT) in the Netherlands.

Antonito, Colo., is the site of **Great Lakes Carbon Corp.'s** newest operation. A new automated plant for processing filteraids from perlite ore is now in operation. Present plant capacity is 24,000 tons of filteraid a year, with provisions made for expansion and additional capacity when needed. Addition of the new Antonito facility for the first time makes all four major types of filteraids—diatomite, perlite, carbon, and cellulose—available from a single domestic source.

Texaco Inc. hit a record high in net income for the first six months of 1961. Consolidated net income was $198,726,264 and represents a 12.1% increase over income for the first six months of 1960.

"Everything's coming up roses" at **International Minerals & Chemical Corp.** IMC just reported the highest annual earnings and sales in the company's history. Net earnings for the fiscal year ended June 30 were $8,143,000, compared to $7,644,000 in the 1959-60 fiscal year.

Associations

Meetings

National Agricultural Chemicals Association will hold its 28th annual meeting October 29-November 1 at the Homestead, Hot Springs, Va. Theme of the program will be "Progress or Complacency." Among the speakers scheduled to appear are Dr. George R. Ferguson, president of Geigy Agricultural Chemicals; Dr. J. O. Rowell, extension entomologist, Virginia Polytechnic Institute; Dr. D. A. Spencer, research

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biologist, Wildlife Research Center, U. S. Fish and Wildlife Service, Denver, Colo.; and Dr. G. Herbert True, assistant professor of marketing, Notre Dame University. Abraham Ribicoff, Secretary of Health, Education, and Welfare, will be the featured speaker at the annual banquet.

There's a big attraction about weeds —and how to control them. More than 170 weed specialists turned out to view the latest in weed control methods at the **1961 Weed & Brush Field Day** at Amchem Products Research Farm, Springhouse, Pa. Included in the projects viewed were brush and soil sterilization experiments, turf tolerance plots, crab grass timing, corn and soybean weed and screening trials.

"Expanding the Fertilizer Market" will be the theme of the 6th annual **Southeastern Fertilizer Conference** to be held at the Atlanta Biltmore Hotel, Atlanta, Ga., October 5-6. Speakers include Dr. E. T. York, director of Federal Extension Service; W. R. Allstetter, vice-president of National Plant Food Institute; and Dr. U. S. Jones, head of agronomy, Clemson (S. C.) College.

People

Hercules Powder Co. has appointed Henry F. Pierce district manager of its newly-formed midwest Agricultural Chemicals sales district. Pierce will make his headquarters in Louisiana, Mo. Kenneth T. Givens has been named assistant sales manager of pesticides. He was formerly senior technical sales-service representative for the Agricultural Chemicals Division in Brownsville, Texas.

Mabry

Mid-South Chemical Corp. has appointed Scott Mabry as district manager. He has been assigned to eastern Iowa and western Illinois district. Before joining Mid-South, Mabry was district manager for Surburban Propane Gas Corp., an agricultural service organization on the East Coast.

J. R. Simplot Co. C. E. "Bill" Brissenden, has been named assistant sales manager of the Minerals & Chemical Division. Brissenden has been with Simplot for nine years; the last four of which he was in charge of Division Market Development. Minerals & Chemical Division also recently appointed Donald B. Holzer as sales representative for Oklahoma and Texas.

FC EDITORIAL CONSULTANT

Shepard

Dr. Harold H. Shepard, noted entomologist and world wide authority on farm chemicals, has been named editorial consultant for FARM CHEMICALS. Shepard is with the Agricultural Stabilization and Conservation Service of the USDA. One of his responsibilities is the preparation of the annual "Pesticide Situation." The 1960-61 "Situation" appears on page 16 of this issue.

F. S. Royster Guano Co. William F. O'Brien has assumed new duties as superintendent of Royster's Madison, Wis., factory. O'Brien, who joined the firm as a temporary laborer in 1953, has been assistant factory superintendent since 1957. He succeeds H. L. Banton, who will become superintendent of the firm's Baltimore factory.

American Cyanamid Co. has announced the promotion of G. F. Stegall to east central regional manager for the Agricultural Division. He replaces Dr. M. J. Harvey, who has been appointed animal feed products supervisor in the division's New York office. Since joining Cyanamid in 1947, Stegall has held several managerial positions involving agricultural sales.

Dow Chemical Co. New manager of the Sales Planning, Development, and Education section (SPADE) of the company's Agricultural Chemicals Sales department is R. B. Korsmeier. He succeeds Hillard L. Smith who was recently named assistant to the manager of Agricultural Chemical Sales. Korsmeier was formerly district sales manager for agricultural chemicals in Dow's Los Angeles, Calif. office.

W. R. Grace & Co. Promotions in the Nitrogen Products Division include R. L. Tilton to General Sales Manager, succeeding F. J. Ronan who has been elected vice-president in charge of marketing; L. P. Massari to assistant general sales manager, with headquarters in Memphis, Tenn.; E. C. Abbott to manager of retail ammonia sales, with headquarters in Memphis; and M. M. McCaslin to sales manager of the St. Louis district. J. L. Wilson was named as General Manager of Sangamon Grace Ammonia Co., Decatur, Ill., succeeding E. C. Abbott.

Monsanto Chemical Co. Thomas M. Rasmussen and George F. Wingard have been elected assistant treasurers by the Board of Directors. Arthur H. Schlesinger has been appointed assistant manager of sales promotion for Monsanto's Organic Chemicals Division.

Thompson-Hayward Chemical Co. has appointed Clarence D. Holthaus as general manager of their Rocky Mountain territory in Denver, Colo. Holthaus will be responsible for Thompson-Hayward's entire chemical activities in Colorado, New Mexico, Wyoming, and Montana. He was formerly branch manager of the company's Laundry and Dry Cleaning Supply Division in Denver.

Suppliers Briefs

Packaging Frontiers, Inc., will soon begin full scale operations. A subsidiary of Bemis Bro. Bag Co., Packaging Frontiers are producers of the new Ultra-Pak packaging system.

Clupak, Inc. played host recently at a meeting of some 40 engineers and other technical people from prominent mills throughout the world which produce Clupak extensible paper. The two-day conference, the third in a series of annual international technical symposiums, was held at Sea Island, Ga.

Storch

American Can Co. has appointed Donald C. Storch Corporate Manager of Purchases. Storch has been with the company since 1949 and has served in various capacities in the purchasing department. Prior to assuming his new duties he was manager, tin plate division of the purchasing department.

Hercules Powder Co. has appointed Moreland Chemical Co., Spartanburg, S. C., a distributor of synthetic resins produced by the company's Pine and

SHUEY & COMPANY, Inc.

Specialty: Analysis of Fertilizer Materials and Phosphate Rock. Official Chemists for the Phosphate Industry. Official Weigher and Sampler for the National Cottonseed Products Association at Savannah; also Official Chemists for National Cottonseed Products Association.

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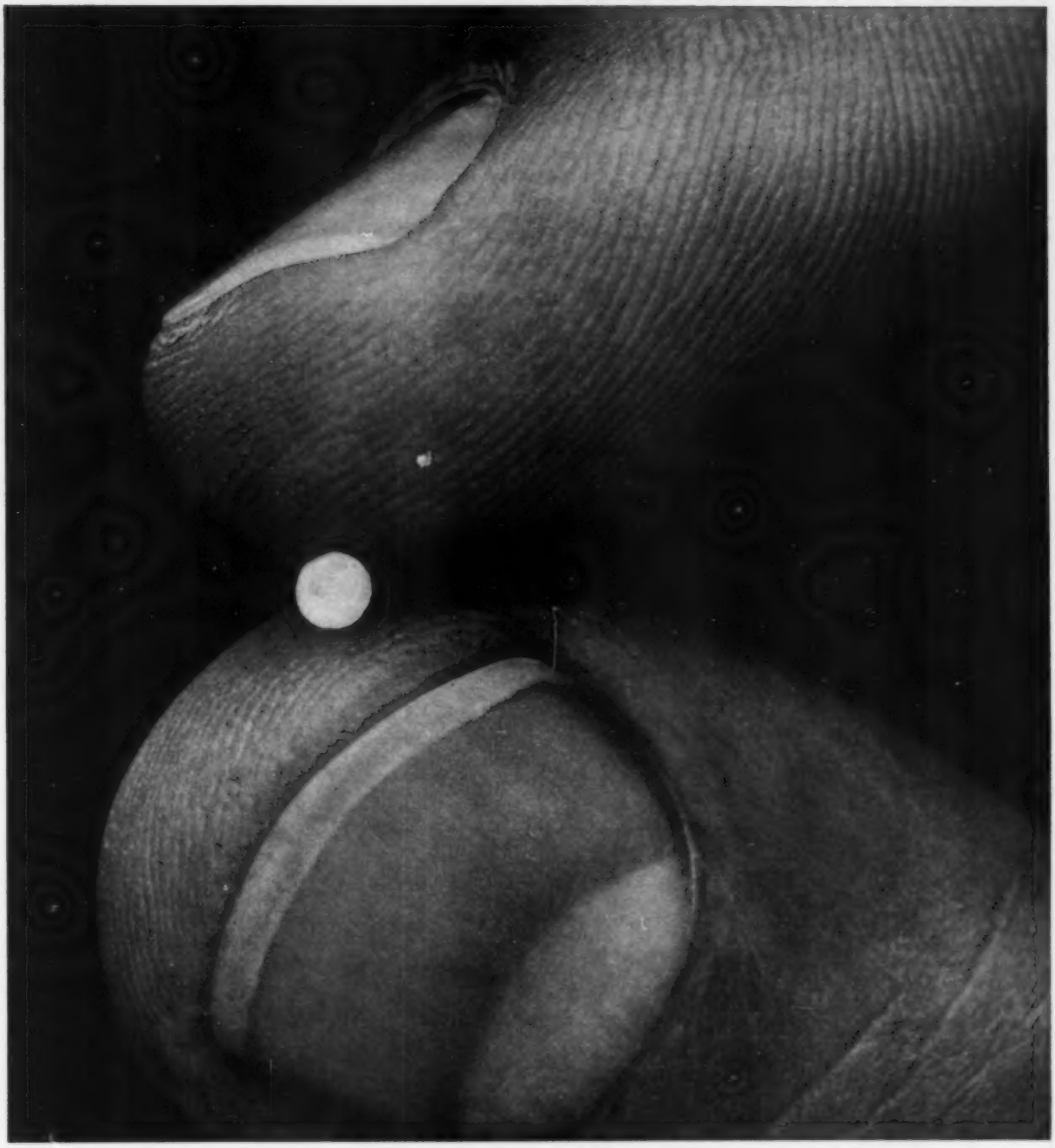
Willoughby, Ohio



From little urea prills big fertilizer profits grow

This remarkable urea prill, produced by Cobalez of Belgium, is probably the most economical and efficient source of solid nitrogen material available in the world today.

Belgian urea prills give you a guaranteed 46% nitrogen. The price per unit of nitrogen is comparable with competitive solid materials. What's more, the nitrogen is concentrated in a compact, uniform unit. Result? Excellent distribution. Easier handling. Substantial savings on transportation and storage.

Belgian urea prills are uncoated, yet so skillfully made they contain less moisture than coated material. They're free flowing; there's no dust problem. And you get maximum solubility (you can dissolve 880 pounds in 100 gallons of water at 68°F.).

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You can buy Belgian urea prills in America right now. In quantity. With fast delivery assured. As the first step in seeing how much better they can do the job for you—and how much bigger they can make your profits grow—send for a free sample and complete information. Simply write to the H. J. Baker office nearest you.

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Est. 1856

Paper Chemicals Department. Moreland will be distributors of synthetic resins for protective coatings, inks, adhesives, etc.

Del Vecchio

Sun-Lac, Inc., has named Silvio A. Del Vecchio as production manager. He will be in charge of the maintenance, engineering, and production operations on all Sun-Lac aerosol filling lines. Prior to joining Sun-Lac, Del Vecchio was maintenance group leader at Revlon.

Texas Gulf-Sulphur Co. Bryan W. Guess has been named head of sales for the Texas Gulf's new potash division. He will have the responsibility for all potash sales and will begin at once to staff and organize a marketing department for the new division. For the past three years he has been assistant manager in the company's sulfur sales department.

Chemicals

USDA has approved Vapona insecticide, manufactured by Shell Chemical Co., as a pressurized spray, solution or water emulsion which may be used by the general public in homes, restaurants, food processing plants, theaters, industrial plants, etc. Label approval is for a 0.5% pressurized spray, solution, or water emulsion of Valpona to be applied as a coarse spray to localized areas which insects may infest.

Residue tolerences for **Heptachlor** and **Heptachlor epoxide** have been established by FDA on selected food crops. New tolerances of 0.1 ppm on snap beans, cabbage, lettuce, and rutabagas have been established.

Chlorobenzilate miticide has been approved for control of spider mites on cotton. It controls Atlantic, European red, Pacific, Schoene, and two-spotted spider mites.

Diazinon, the insecticide in standard use on fruit, field, and vegetable crops, has now been cleared for application on alfalfa, peas, beans, and corn.

Thiodan has been approved by USDA for use on sugar beets. Niagara Chemical reports that the chemical can be used to control webworm and green peach aphid.

Development quantities of **thioacetic acid** are now available from Stauffer Chemical Co. Major uses for the acid are as an intermediate for producing *n*-mercaptomethyl polyamides, synthetic resins, pesticides, esters, and as additives for rubber and oils.

Calendar

September 3-8. American Chemical Society, national meeting, Chicago, Ill.

September 5-8. National Chemical Exposition, sponsored by American Chemical Society Chicago section, International Amphitheater, Chicago, Ill.

September 11-13. Farm Equipment Institute annual convention, Palmer House, Chicago, Ill.

September 11-15. Instrument Society of America Instrument — Automation Conference (The Biltmore Hotel) and Exhibit (Memorial Sports Arena), Los Angeles, Calif.

September 24-27. American Institute of Chemical Engineers 46th annual meeting, Lake Placid Club, Lake Placid, N.Y.

October 4-6. Southeastern Fertilizer Conference, Atlanta Biltmore Hotel, Atlanta, Ga.

October 9-11. Western Agricultural Chemicals Association, annual meeting, Hotel Claremont, Berkeley, Calif.

October 12- 13. Northeastern Fertilizer Conference, Schine Inn, Chicopee, Mass.

October 29-November 1. National Agricultural Chemicals Association, 28th annual meeting, The Homestead, Hot Springs, Virginia.

November 2-3. Pacific Northwest Plant Food Association, annual convention, Hotel Gearhart, Gearhart, Ore.

November 6-7. Washington State Weed Association, annual weed conference, Chinook Motel & Tower, Yakima, Wash.

November 8-10. Fertilizer Industry Round Table, Mayflower Hotel, Washington, D. C.

November 14-15. Farm Chemicals Marketing Seminar, Yale Club, New York City. Sponsored by FARM CHEMICALS.

November 27-December 1. 28th Exposition of Chemical Industries, New York Coliseum, New York City.

December 11-14. North Central Weed Control Conference, Weed Society of America, St. Louis, Mo.

December 13-15. American Society of Agricultural Engineers, winter meeting, The Palmer House, Chicago, Ill.

February 6-7, 1962. Vertebrate Pest Control Conference, Senator Hotel, Sacramento, California.

March 13-14. Symposium on Packaging of Chemical Products, Chase-Park Plaza Hotel, St. Louis, Mo.

TEXAS GULF

(Continued from page 13)

D. Little, Inc., projects that free world demand for potash will double again by 1975. This survey further indicates that there will be a probable total demand for U. S. and Canadian production of about 5,850,000 tons of muriate of potash for the fertilizer year beginning June 1, 1963. By that time it is estimated that total U. S. and Canadian productive capacity — excluding Utah — will be about 4,850,000 tons.

The extensive developmental program of the company's potash reserve indicates a high grade of ore, which means our production cost will be favorable.

Work on the vast mining and refining complex has proceeded on schedule this summer, and approximately $13 million has been allocated by the company for this project for the current year. Its total cost is budgeted at approximately $30 million.

Through careful engineering, the initial mine shaft has been designed so that the mine's output can be increased 50%, as demands warrant, simply by additions to the surface plant. Incidentally, our company forsees no difficulties in sinking the mine shaft.

The subsurface area, according to the findings, should present no unusual problems. Another major part of the project, also underway, is construction of a 36-mile spur to the plant site from Crescent Junction on the main line of the Denver & Rio Grande Western.

Texas Gulf Sulphur's new venture into the field of potash is opening up a whole new horizon for this company. Because of the important role which potash plays in the fertilizer field, we expect our potash division to mesh neatly into our sulphur marketing program. One-third of all sulphur produced in the United States—in the form of sulfuric acid—is used in the production of fertilizers — superphosphates, ammonium phosphates, ammonium sulfate, and mixed fertilizers.

It is too early to detail the specifics of how Texas Gulf's potash will be marketed throughout the farm chemicals field, but it is safe to predict that within the next two years it will be playing an important role in the manufacture of modern fertilizers.

Every single day the world has a net total of over 150,000 new mouths to feed and scientists say that the present world population of almost 3 billion may pass 6 billion during the last quarter of this century. As our company's president, Claude O. Stephens, recently remarked: "Texas Gulf believes that by developing its rich Utah potash deposit, it will help meet one of the greatest challenges—that of increasing the earth's capability to produce more food."

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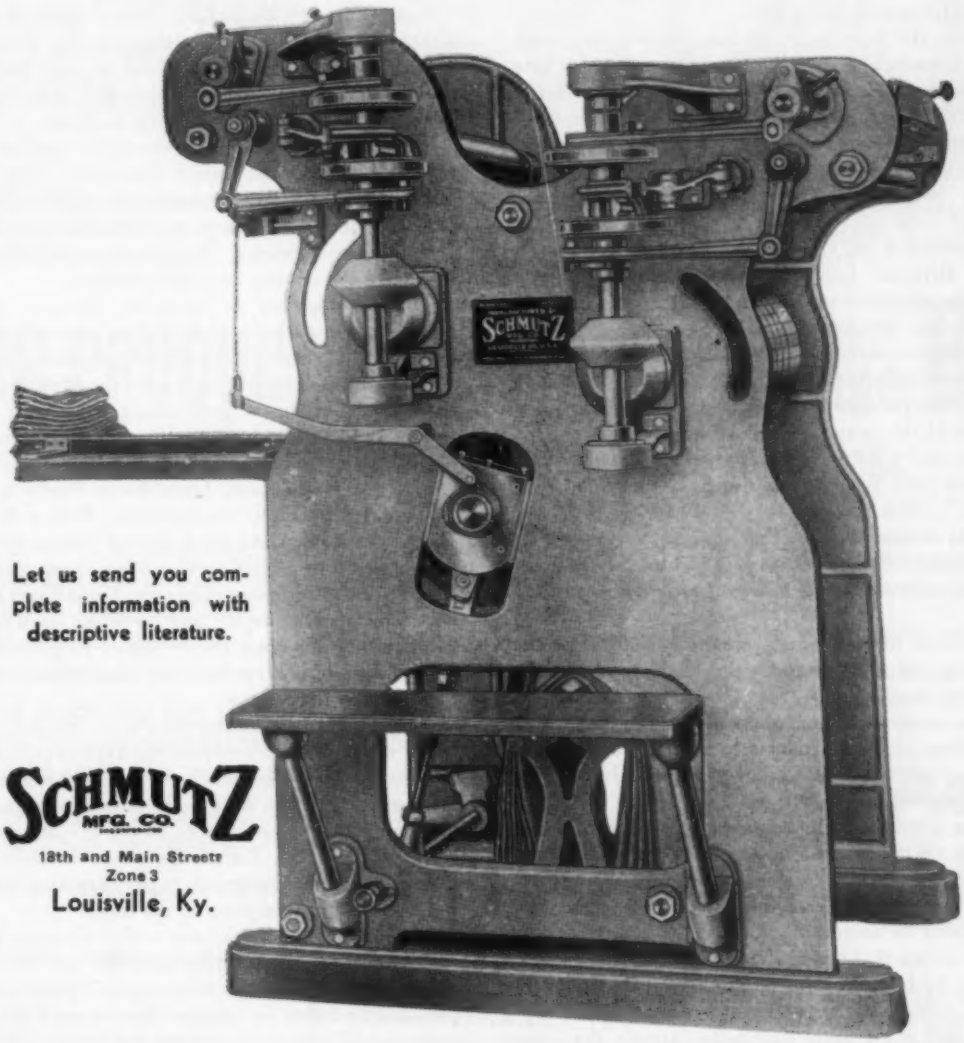

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No room for lemmings

A lemming has been described as a "small, mousy animal which runs in packs over the Arctic tundra." Though we've never seen one, our source tells us lemmings are "dressed in gray fur suits, each one looks exactly like his neighbor. There are no individualists among lemmings."

Sometimes the fertilizer industry reminds us of a "pack of lemmings." The reason: lack of individual market promotion programs.

Unlike the lemming's sad fate, no company need suffer from lack of individuality! Our magazine files are full of success stories about companies who dared to be different. Expanded markets resulted from their imaginative merchandising programs.

One such company recently made it clear that the slogan "beaten paths for beaten men" does not apply to their sales organization. M. E. "Mel" Wierenga, vice president of California Chemical Company's Ortho Division, has been making quite a hit ever since he appeared on the Farm Chemicals Marketing Seminar program last fall.

Take the speech he gave at the recent Southwest Fertilizer Conference, Galveston, Texas, for instance. (We're not publishing the full text this month, since readers of this magazine gained an excellent insight into his and Cal Chemical's marketing philosophy in the May 1961 issue, "How Calchem Spots Top Personnel."). Mel asked:

"Why doesn't the fertilizer industry employ some sales imagination? Perhaps it is because the management is generally in the hands of production-minded men.

"Perhaps there are not enough specialists in advertising and marketing. Or they have too little say so in company policy.

"Too many of the members of our industry leave the selling of their products to a third party—such as experiment stations, universities, colleges, and trade associations.

"The third party many times is primarily interested in saving farmers money—not *making money*. As a result, they recommend that farmers buy as cheaply as possible, and this further degrades merchandising techniques."

Mel added that the grower's opportunity to *make money*, by being certain he purchases the *right fertilizer*, uses it in the proper amount, applies it correctly and at the right time is far greater than any possible saving he may derive from "chiseling a few dollars on the price." It should take very little imagination or time to understand that.

"There is far more romance in making money than in saving it!" he said.

Mel's pleas for greater imagination in fertilizer merchandising couldn't have been better timed! FARM CHEMICALS heard reports of a new trend which is creating havoc in the industry. Here's the story as we heard it.

In some respects, Joe Wright of Texas Farm Products is representative of the fertilizer mixers of the Southwest. Joe, who is in business with his father and brother at Nacogdoches, Texas, attended the conference.

Texas Farm Products told FARM CHEMICALS that although volume is up, profits are down. The company also noted that development of new fertilizer processes and equipment is drastically changing the old, established methods of doing business.

Texas Farm Products has one of the most modern mixing plants in the entire Southwest. They turn out high quality granular fertilizers—easy to handle and with even consistency, so that each foot of soil gets the same formula. Yet, lower-priced, blended fertilizers are cutting into their business.

The development of granular nitrogen, phosphorus, and potash products by basic manufacturers makes it much easier to blend an acceptable product. And the farmers buys on price. So the company's investment in expensive granulating equipment some five years ago could have been a poor investment.

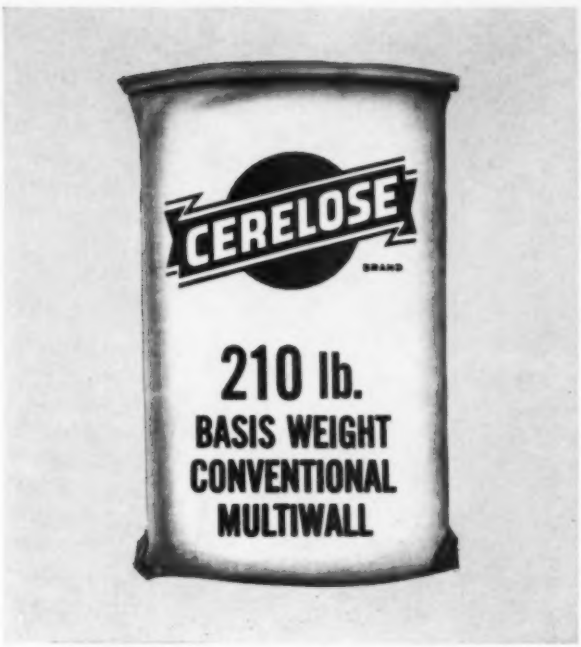
Because of its extensive feed business and integrated broiler business, Texas Farm Products isn't too worried by these developments. With a fleet of 150 trucks serving the great state of Texas, they are in a position to offer a service other competing fertilizer companies cannot duplicate. Texas Farm Products can manufacture for and serve the small dealer to whom price is not a major factor. Its granulating equipment will be kept busy for many years serving these smaller customers.

Nevertheless, the handwriting is on the wall. Fertilizer mixing does not require the skill or equipment it formerly did. Manufacturers of blending equipment are selling blenders to the larger farmers, who are doing their own custom blending—at substantial savings in cost. The pipeline from the basic producer of fertilizer materials to the farmer is becoming shorter and straighter all the time.

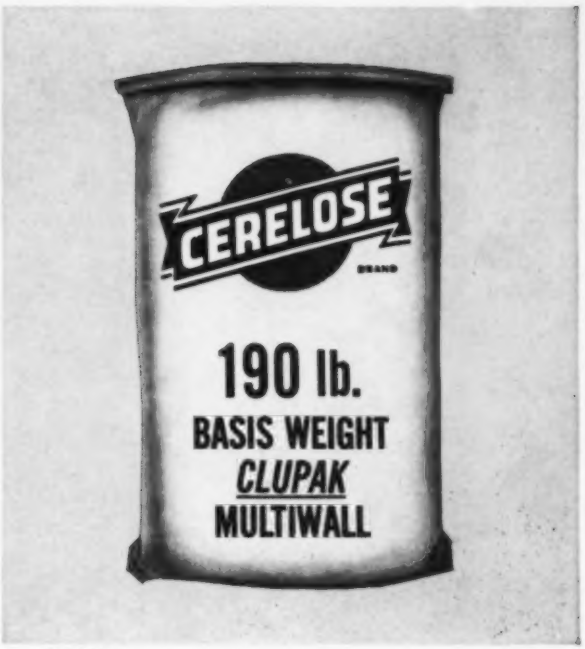
It's obvious that the answer to this dilemma is not improved production techniques or, as Mel said, "leaving the selling to a third party." Quality products will be *taken for granted*. The element that will make the difference is a new kind of service for farmers that will keep them out of the fertilizer business.

Gordon L. Berg

EDITOR



BEFORE: 5-ply conventional kraft bag
(4 plies of 40 lb. kraft and one 50 lb.)
% of bags damaged: 1.5%



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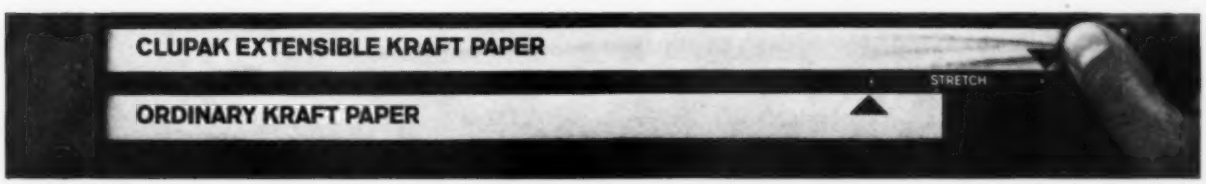

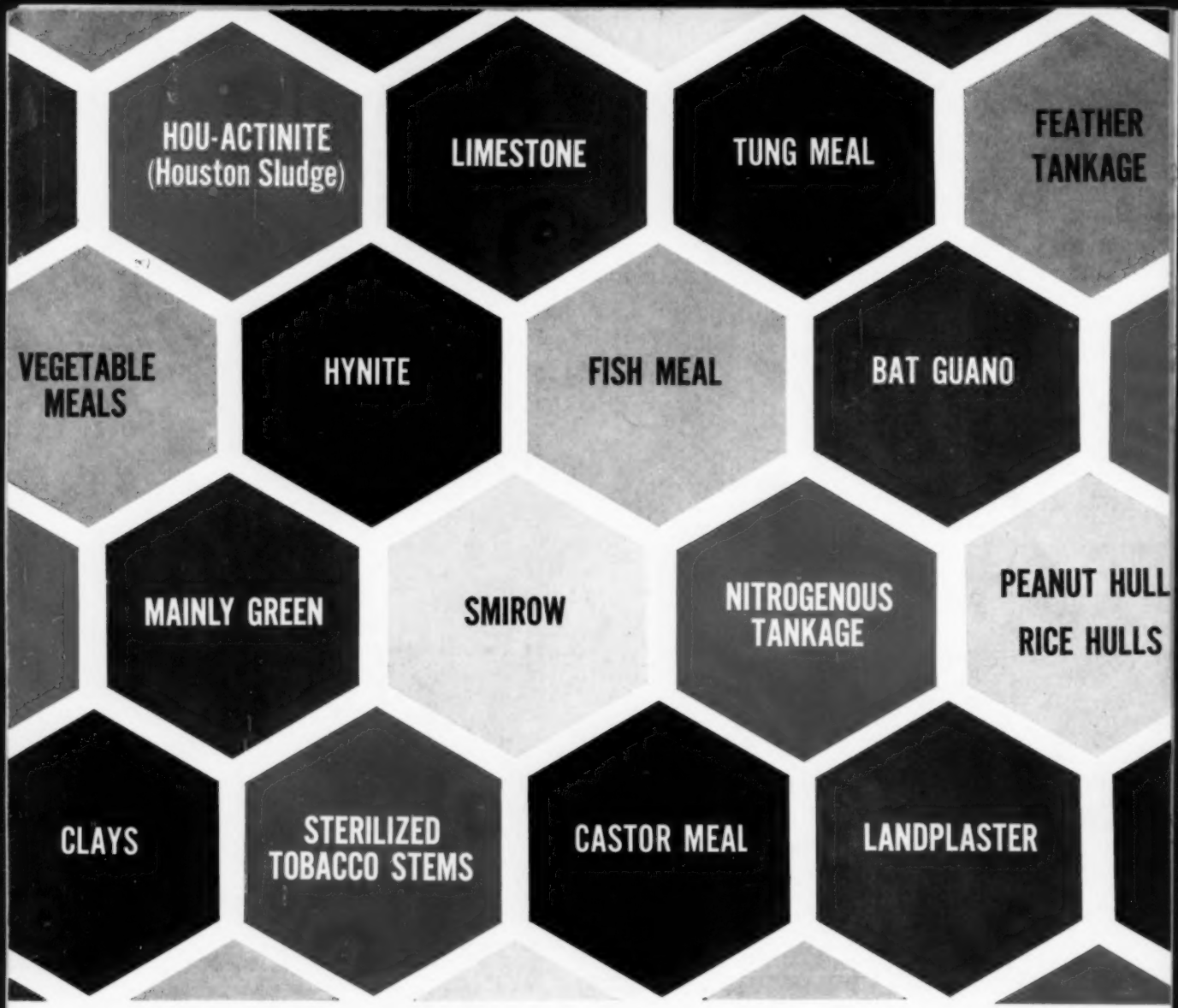

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